

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of

Intelsat License LLC

Application to Modify Authorization for
Intelsat 9 (S2380)

File No. SAT-MOD- _____

**APPLICATION OF INTELSAT LICENSE LLC
TO MODIFY AUTHORIZATION FOR INTELSAT 9**

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 9 satellite (Call Sign S2380). Specifically, this modification application seeks authority to relocate Intelsat 9 to, and operate the satellite in inclined orbit¹ at, 29.5° W.L. In addition, this modification application seeks to further extend the license term and the previously granted waiver for Intelsat 9 for two additional years, through July 31, 2019, which is the satellite’s current projected end of service life.

In accordance with the Commission’s rules,² 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.³

¹ Intelsat 9 began inclined orbit operations in 2012. *See* Letter from Susan H. Crandall, Assistant General Counsel, Intelsat Corporation, to Marlene H. Dortch, Secretary, FCC, File No. SAT-MOD-20120703-00110 (Nov. 7, 2012).

² 47 C.F.R. § 25.117(c).

³ 47 C.F.R. § 25.114.

I. PROPOSED MODIFICATIONS

A. Relocation to 29.5° W.L.

Intelsat requests authority to relocate Intelsat 9 to, and operate the satellite in inclined orbit at, 29.5° W.L. Intelsat 9 is currently operating at 43.1° W.L.⁴ Upon receipt of Commission approval, Intelsat expects to begin drifting Intelsat 9 to 29.5° W.L. commencing on or about May 1, 2017. The drift to 29.5° W.L. is expected to take approximately two months. Intelsat 701, which currently operates at 29.5° W.L.,⁵ is expected to be de-orbited in the second quarter of 2017.

During the drift of Intelsat 9, Intelsat will utilize only the satellite's telemetry, tracking, and command ("TT&C") frequencies and will follow industry practices for coordinating TT&C transmission during the relocation process. Intelsat 9's specific TT&C frequencies are as follows:

Uplink:	Downlink:
14.4945 GHz	11.7005 GHz
14.0005 GHz	11.7025 GHz

⁴ See *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-01094, SAT-MOD-20150430-00032 (July 10, 2015) (extending the license term for Intelsat 9 at 43.1° W.L. through July 31, 2017).

⁵ See *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-01168, File No. SAT-MOD-20160425-00040 (June 17, 2016) (extending the license term for Intelsat 701 at 29.5° W.L. through December 31, 2018).

The specific communications frequencies on Intelsat 9 are as follows:

Uplink:

5925-6425 MHz
14.0-14.5 GHz

Downlink:

3700-4200 MHz
11.45-11.7 GHz
11.7-12.2 GHz⁶

B. Extension of License Term

Intelsat seeks to extend the license term for the Intelsat 9 satellite for two additional years, through July 31, 2019. The Intelsat 9 satellite was placed into service on September 6, 2000.⁷ The current July 31, 2017 license term expiration for Intelsat 9 is two years before the current expected end of service life of the satellite, which most recently was estimated to be July 31, 2019.

II. PUBLIC INTEREST SHOWING

Grant of this modification application to relocate and extend the license term of Intelsat 9 is in the public interest because it will allow Intelsat to provide additional capacity at the 29.5° W.L. location and continue providing service on the satellite well beyond the current license term's July 31, 2017 expiration date.

Grant of this relocation request will not result in increased risk of harmful interference.

As noted above, Intelsat will operate only at the above listed TT&C frequencies during the drift,

⁶ Intelsat 9 will use the 11.7-12.2 GHz to serve Region 2 only. Accordingly, Intelsat's operations in this band will be consistent with the International Table of Frequency Allocations included in 47 C.F.R. § 2.106.

⁷ See Letter from Joseph A. Godles, Counsel to PanAmSat Licensee Corp., to Ms. Magalie R. Salas, FCC, File No. SAT-LOA-19990812-00081 (Jan. 12, 2001) (certifying that the PAS-23 spacecraft had been successfully placed into orbit). The PAS-23 satellite was subsequently renamed Intelsat 9. See Letter from Susan H. Crandall, Intelsat Corporation, to Marlene H. Dortch, FCC, Intelsat North America LLC and PanAmSat Licensee Corp., Notification of New Space Station Names (filed Jan. 8, 2007).

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 9's communications payload and TT&C frequencies at 29.5° W.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 two years of useful life remaining beyond the current license term's expiration date. Moreover, further extending the license term of the Intelsat 9 satellite will not affect the satellite's post-mission disposal plan. As approved in an earlier Intelsat 9 modification application,⁸ Intelsat intends to dispose of the Intelsat satellite by moving it to a minimum altitude of 150 kilometers above the geostationary arc⁹ and has reserved 42.4 kilograms of fuel for this purpose.

There are no single points of failure on Intelsat 9 that would result in an inability to de-orbit the satellite and the satellite's TT&C functions are operating nominally.¹⁰ Extending the license term will promote the continued efficient use of orbital resources and is consistent with recent decisions by the Commission to extend satellite license terms.¹¹

⁸ See *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-01017, File No. SAT-MOD-20120703-00110 (May 23, 2014).

⁹ The Commission has designated satellites launched prior to March 18, 2002, such as Intelsat 9, as grandfathered satellites not subject to a specific disposal altitude. See *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567, 11600-01 (2004).

¹⁰ The Xenon Ion propulsion system on Intelsat 9 is non-operational. Intelsat uses liquid propulsion for all East-West station-keeping of Intelsat 9.

¹¹ See, e.g., *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-01199, DA 16-1251, File Nos. SAT-MOD-20160805-00079, SAT-MOD-20160816-00084, and SAT-MOD-20160906-00088 (Nov. 4, 2016) (extending license terms of the Intelsat 904, Intelsat 902, and Intelsat 901 satellites, respectively); *Policy Branch Information; Actions Taken*, Public

III. REQUEST FOR EXTENSION OF WAIVER

Intelsat requests that the waiver previously granted for Intelsat 9 be extended to the satellite at 29.5° W.L and to Intelsat 9's further extended license term. Specifically, for the reasons cited by the Commission, Intelsat requests continued waiver of footnote NG52 of Section 2.106, as previously conditioned.¹²

IV. REQUEST FOR TECHNICAL WAIVER

Intelsat requests waiver, to the extent necessary, of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission's rules, which require that spacecraft are able to vent all pressurized systems at end of life. Under Section 1.3 of the Commission's rules, the Commission has authority to waive its rules "for good cause shown."¹³ 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.¹⁴ In determining whether waiver is appropriate, the Commission should "take into account considerations of hardship, equity, or more effective implementation of overall policy."¹⁵ As shown below, there is good cause for the requested waiver.

Notice, Report No. SAT-01118, DA 15-1308, File No. SAT-MOD-20150918-00064 (Nov. 13, 2015) (extending license term of the DIRECTV-5 satellite).

¹² See Intelsat License LLC, Application to Modify Authorization for Intelsat 9 (S2380), File No. SAT-MOD-20120703-00110, Stamp Grant Condition #5 (May 21, 2014).

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

¹⁴ *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

¹⁵ *WAIT Radio*, 418 F.2d at 1159.

Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission's rules require an applicant to demonstrate that all stored energy will be vented at the spacecraft's end of life.¹⁶ Intelsat 9 is a Boeing model 601HP spacecraft that is not designed to vent all pressurized systems. The Intelsat 9 satellite has two helium tanks with a total remaining pressure of 3200 KPa. After orbit raising was completed, the two helium tanks were permanently isolated from the propulsion system by firing two pyrotechnic valves at beginning of on-orbit life such that the residual gas (about 12%) cannot be vented at end of life.

Waiver is appropriate in this case because grant would not undermine the purpose of these rules, which is to reduce the risk of accidental explosion and post de-orbit debris. As explained on page 5 of the attached Engineering Statement, Intelsat will ensure that all active units on the Intelsat 9 satellite are turned off and that all propellant tanks are depleted. In addition, the satellite's manufacturer, Boeing, has designed the Intelsat 9 spacecraft so that risk of accidental explosion causing additional orbital debris is minimal. First, the risk of accidental explosions is minimized because the pressures will be very low at end of life of the satellite, especially after the spacecraft is powered down and the temperature in the tanks drops. Additionally, Boeing has designed the tanks so that they leak before they burst. If a leak were to occur, there would not be sufficient energy in the gas stream to damage structurally the spacecraft and generate debris. Moreover, a leak would not significantly perturb the satellite's orbit because the expulsion of the pressurant gas would cause the spacecraft to tumble and the change in the spacecraft's velocity (i.e., the thrust) would be randomly distributed, with the resulting impact on the satellite orbit's apogee and perigee being very small.

¹⁶ 47 C.F.R. §§ 25.114(d)(14)(ii) & 25.283(c).

Grant of the waiver is also supported on hardship grounds. The pressurant tank on the Intelsat 9 satellite was 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 9 is an in-orbit spacecraft. As such, a design change cannot be accomplished at this time. Avoiding such hardship is particularly appropriate where, as here, the licensee acted in good faith. Specifically, the Intelsat 9 satellite was licensed, launched, and operational prior to adoption of the rule requiring discharge of remaining fuel at end-of-life.¹⁷ Under these circumstances, good cause exists to waive Sections 25.114(d)(14)(ii) and 25.283(c).¹⁸

V. REQUEST FOR GRANT WITHOUT A BOND

Intelsat seeks a waiver of the milestone and bond posting requirements set forth in Sections 25.164 and 25.165 of the Commission's rules¹⁹ for the 11.95-12.2 GHz band, which is not currently on an FCC-licensed satellite at the 29.5° W.L. orbital location. The Commission should grant this application without imposing milestones or a bond because Intelsat 9 is already

¹⁷ The Commission granted Intelsat's predecessor PanAmSat authority to launch the Intelsat 9 satellite on July 6, 2000, and the satellite was launched and began operations on September 6, 2000. Intelsat 9 was previously known as both PAS-23 and PAS-9. *See PanAmSat Licensee Corp. Application for Authority to Launch and Operate a Replacement Hybrid C/Ku-band Fixed-Satellite Service Space Station at 58 W.L. Known as PAS-23*, 15 FCC Rcd 11747, File Nos. SAT-LOA-19990812-00081 and SAT-MOD-20050325-00074 (2000). The Commission's orbital debris mitigation rule requiring discharge of all propellant, Section 25.283(c), was not adopted until three years later in an order released June 21, 2004, *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004), that became effective October 12, 2004. *Mitigation of Orbital Debris*, 69 Fed.Reg. 54581-54589 (Sept. 9, 2004).

¹⁸ The FCC has previously waived Section 25.283(c) of its rules when the action taken to seal the tank was taken prior to the adoption of this rule, and compliance would require direct retrieval of the spacecraft. *See, e.g., Policy Branch Information; Actions Taken*, Report No. SAT-00976, File No. SAT-MOD-20130322-00052 (Oct. 25, 2013) (Public Notice) (grant stamp with conditions Oct. 23, 2013).

¹⁹ 47 C.F.R. §§ 25.164 and 25.165.

in orbit and, as such, there is no risk of warehousing. Indeed, the Commission has granted similar applications for in-orbit satellites without imposing milestones or a bond.²⁰

VI. INTELSAT ACCEPTS SECTION 316 PETITION CONDITIONS

Intelsat understands and accepts that its license to operate Intelsat 9 at 29.5° W.L., with the exception of the 11.95-12.2 GHz frequencies, will be conditioned as follows:

- (a) Intelsat shall remain a signatory to the Public Services Agreement between Intelsat and the International Telecommunications Satellite Organization (“ITSO”) that was approved by the ITSO Twenty-fifth Assembly of Parties, as amended.
- (b) No entity shall be considered a successor-in-interest to Intelsat under the ITSO Agreement for licensing purposes unless it has undertaken to perform the obligations of the Public Services Agreement approved by the Twenty-fifth Assembly of Parties, as amended.²¹

VII. 11.45-11.7 GHZ FREQUENCY BANDS

Intelsat understands that operations in the 11.45-11.70 GHz frequency band are subject to certain limitations and obligations, which Intelsat accepts and will fulfill.

For operations in the 11.45-11.70 GHz frequency band, Intelsat accepts the following condition:

- Intelsat’s use of the 11.45-11.70 GHz 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.

²⁰ See *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-00541, File No. SAT-MOD-20080225-00051 (July 25, 2008); see *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-00561, File No. SAT-MOD-20080725-00150 (Oct. 24, 2008).

²¹ See *Petition of the Int’l. Telecomms. Satellite Org. under Section 316 of the Commc’ns Act, as Amended*, Order of Modification, 23 FCC Rcd 2764, 2769-71 ¶¶ 11-13 (Int’l Bur. 2008).

VIII. 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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November 10, 2016

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

¹ *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 22151 (2007).

² *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”),³ based on the Bureau’s finding that PanAmSat had not satisfied applicable construction milestones.⁴ 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.

³ 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).

⁴ 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:

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

Board of Managers:

Jacques Kerrest
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.