

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of

Intelsat License LLC

Application to Modify Authorization for
Intelsat 7 (S2229)

File No. SAT-MOD- _____

**APPLICATION OF INTELSAT LICENSE LLC TO
MODIFY AUTHORIZATION FOR INTELSAT 7**

Intelsat License LLC (“Intelsat”), pursuant to Section 25.117 of the rules of the Federal Communications Commission (“Commission” or “FCC”),¹ hereby seeks to modify the authorization for the Intelsat 7 satellite (Call Sign S2229).² Specifically, Intelsat seeks to extend the license term for the Intelsat 7 satellite for approximately five and a half years through April 1, 2019, which is the current projected end of service life.

In accordance with the requirements of the Commission’s rules,³ this application has been filed electronically as an attachment to FCC Form 312. Intelsat incorporates by reference the technical information previously provided regarding the operations of Intelsat 7⁴ and attaches an orbital debris mitigation statement for the Intelsat 7 satellite. Consistent with Section 1.62 of

¹ 47 C.F.R. § 25.117.

² Intelsat 7 was formerly known as PAS-21/PAS-7. *See* Letter from Susan H. Crandall, Intelsat, to Marlene H. Dortch, FCC, Notification of New Space Station Names (Filed Jan. 8, 2007).

³ 47 C.F.R. § 25.117(c).

⁴ *See Policy Branch Information; Actions Taken*, Report No. SAT-00222, File No. SAT-MOD-20040405-00078 (Jun. 18, 2004)(Public Notice).

the Commission's rules, Intelsat will continue to operate the Intelsat 7 satellite pursuant to the terms and conditions of its expiring license until such time as the Commission makes a determination with respect to this request.⁵

I. REQUEST FOR EXTENSION OF LICENSE TERM

Intelsat seeks to extend the license term for the Intelsat 7 satellite for approximately five and a half years through April 1, 2019. The Intelsat 7 satellite was launched on September 16, 1998,⁶ and placed into service in November 1998.⁷ The FCC records state that the license term will expire on September 14, 2013.⁸ That expiration date is well before the expected end of service life of the satellite.

Intelsat's most recent SEC filing lists the estimated end of Intelsat 7's station-kept life as the end of September 2013.⁹ Since that filing, however, Intelsat has placed the Intelsat 7 satellite

⁵ 47 C.F.R. § 1.62.

⁶ See PanAmSat Licensee Corp., Request for Special Temporary Authority, File No. SAT-LOA-19960202-00017 (filed Sept. 15, 1998)(requesting special temporary authority to launch and operate PAS-21, now called Intelsat 7).

⁷ See Letter from Joseph A. Godles, Attorney for PanAmSat Corporation, to Marlene H. Dortch, FCC, PanAmSat Corporation Annual Status Report at 7 (Jul. 1, 2012).

⁸ 47 C.F.R. §§ 25.121(a) & (d)(1). Because the satellite commenced service in November 1998, the license term should expire in November 2013, rather than September 2013. Nonetheless, this license extension request is timely filed with respect to either date.

⁹ See *Amendment No. 9 to Form F-1 Registration Statement*, Intelsat Global Holdings S.A. (Apr. 9, 2013), available at <http://www.sec.gov/Archives/edgar/data/1525773/000119312513147847/d204908df1a.htm>.

into inclined orbit.¹⁰ With the increased fuel savings from inclined orbit operations, the current projected end of service life for Intelsat 7 is April 1, 2019.

II. PUBLIC INTEREST SHOWING

Grant of this modification application to extend the Intelsat 7 license term will serve the public interest by enabling customers to continue receiving service from this operational satellite. The Intelsat 7 satellite has more than five years of useful life remaining. There are no single points of failure on Intelsat 7 that would result in an inability to de-orbit the satellite. Additionally, the satellite's TT&C functions are operating nominally. 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

In the attached Orbital Debris Mitigation Plan, Intelsat has provided a post-mission disposal plan for the Intelsat 7 satellite. This plan demonstrates that the Intelsat 7 satellite has sufficient fuel to be disposed by moving it to a minimum altitude of 276.3 km above the geostationary arc, which is consistent with the IADC formula and well above the 150 km altitude

¹⁰ Intelsat filed notice of commencement of inclined orbit operations for Intelsat 7 at 68.65° E.L. on May 7, 2013. *See* Letter from Susan H. Crandall, Intelsat, to Marlene H. Dortch, FCC, Notice of Commencement of Inclined Orbit Operations for Intelsat 7 (May 7, 2013).

¹¹ *See Policy Branch Information; Actions Taken*, Report No. SAT-00905, DA 12-1680, File No. SAT-MOD-20120629-00109 (Oct. 19, 2012) (Public Notice) (extending license terms of an SES satellite for an additional five years); *Policy Branch Information; Actions Taken*, Report No. SAT-00664, DA 10-236, File No. SAT-MOD-20091119-00123 (Feb. 5, 2010)(Public Notice) (extending license term of Sirius XM satellites for an additional seven years).

typically approved for satellites launched prior to March 18, 2002.¹² Intelsat has reserved 42.8 kilograms of fuel for this purpose.

III. CONCLUSION

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

Respectfully submitted,

Intelsat License LLC

By: /s/ Susan H. Crandall

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August 19, 2013

¹² The Commission has found that satellites launched prior to March 18, 2002, such as Intelsat 7, would be designated 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).

Orbital Debris Mitigation Plan

Intelsat is proactive in ensuring safe operation and disposal of the Intelsat 7 satellite and all spacecraft under its control. The four elements of debris mitigation are addressed below.

1) Spacecraft Hardware Design: The spacecraft is designed such that no debris will be released during normal operations. Intelsat has assessed the probability of collision with meteoroids and other small debris (<1 cm diameter) and has taken the following steps to limit the effects of such collisions: (1) critical spacecraft components are located inside the protective body of the spacecraft and properly shielded; and (2) all spacecraft subsystems have redundant components to ensure no single-point failures. The spacecraft does not use any subsystems for end-of-life disposal that are not used for normal operations.

2) Minimizing Accidental Explosions: Intelsat has assessed the probability of accidental explosions during and after completion of mission operations. The spacecraft is designed in a manner to minimize the potential for such explosions. Propellant tanks and thrusters are isolated using redundant valves and electrical power systems are shielded in accordance with standard industry practices. At the completion of the mission, and upon disposal of the spacecraft, Intelsat will ensure the removal of all stored energy on the spacecraft by depleting all propellant tanks, venting all pressurized systems, and turning off all active units.

3) Safe Flight Profiles: Intelsat has assessed and limited the probability of the space station becoming a source of debris as a result of collisions with large debris or other operational space stations. Intelsat is not aware of any other FCC licensed system, or any other system applied for and under consideration by the FCC, having an overlapping station-keeping volume with Intelsat 7. Intelsat is also not aware of any non-Intelsat system with an overlapping station-keeping volume with Intelsat 7 that is the subject of an ITU filing and that is either in orbit or progressing towards launch.

4) Post Mission Disposal: At the end of the mission, Intelsat expects to dispose of the spacecraft by moving it to a planned minimum altitude of 276.3 kilometers (perigee) above the geostationary arc, which is the altitude established by the

IADC formula.¹ Nevertheless, as the Commission is aware, because there is no mechanism for precisely calculating the amount of fuel left on the spacecraft once it is in orbit, it is possible that the spacecraft will not meet the planned minimum de-orbit altitude.

In its Second Report and Order in IB Docket 02-54 (FCC Document Number: 04-130), the FCC declared that satellites launched prior to March 18, 2002, such as Intelsat 7, would be designated as grandfathered satellites not subject to a specific disposal altitude. Therefore, the Intelsat 7 planned disposal orbit complies with the FCC's rules.

In addition, Intelsat provides the following information:

- 1) Planned orbital eccentricity: 1.1262E-04 (This is a best estimate of optimal eccentricity to match the natural eccentricity circle due to Sun and Moon perturbations after decommission.²)
- 2) Planned apogee altitude: 285.86 km³
- 3) Information concerning the methods that will be used to assess and provide adequate margins concerning fuel gauging uncertainty: For the Intelsat 7 spacecraft, in addition to the nominal hold-back and reserves provided to us by the manufacturer, Intelsat propulsion engineers review the current propellant usage – particularly the mixing ratio – to properly allocate sufficient margin to account for unavailable propellant that may result from a non-optimal mixing ratio. In addition, Intelsat performs thermal gauging near the spacecraft's end of life by inferring the remaining propellant from the thermal signature when Intelsat applies heat to different parts of the propellant tank system. This information is considered when determining the additional hold-back and adjustments to book values to attempt to ensure sufficient propellant to achieve the planned minimum altitude. There are,

¹ Intelsat has reserved 42.8 kilograms of fuel for this purpose. The fuel gauging uncertainty has been taken into account in these calculations.

² Because it is extremely difficult to anticipate end-of-life thruster performance and operational conditions, it is extremely difficult to achieve the planned eccentricity. Intelsat's priority is to achieve the planned minimum perigee of 276.3 kilometers. In order to achieve the planned eccentricity, not only must there be sufficient propellant reserved but, in addition, individual thrusters must be fired at specific times during satellite decommissioning because the timing of thruster firing will affect eccentricity. Due to difficulties in predicting the thruster end-of-life performance, as well as earth station availability and visibility as the satellite drifts, it may not be possible to fire the right thrusters at the optimal times. Thus, optimal eccentricity may not be achieved, which, in turn, will affect the apogee altitude.

³ See n.2.

however, many uncertainties to both methods that could lead to incorrect conclusions regarding remaining fuel.

Certification Statement

I hereby certify that I am a technically qualified person and am familiar with Part 25 of the Commission's Rules and Regulations. The contents of this engineering statement were prepared by me or under my direct supervision and to the best of my knowledge are complete and accurate.

/s/ Abdolmajid Khalilzadeh

August 15, 2013

Abdolmajid Khalilzadeh
Senior Principal Engineer,
Spectrum Strategy

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 22,151 (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:

Michael McDonnell, Chairman
Flavien Bachabi, Deputy Chairman
Michelle Bryan, Secretary
Simon Van De Weg, Director, Finance

Board of Managers:

Michael McDonnell
Flavien Bachabi
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 consummated.