

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of

Intelsat License LLC

Application to Modify Authorization for
Intelsat 10-02 (S2414)

File No. SAT-MOD-_____

**APPLICATION OF INTELSAT LICENSE LLC
TO MODIFY AUTHORIZATION FOR INTELSAT 10-02**

Intelsat License LLC (“Intelsat”), pursuant to Section 25.117 of the Federal Communications Commission’s (“Commission” or “FCC”) rules,¹ hereby seeks to modify the authorization for Intelsat 10-02 (Call Sign S2414), a C-band and Ku-band satellite operating at 1.0° W.L.² Specifically, Intelsat seeks to extend the license term and previously granted waivers for the Intelsat 10-02 satellite through December 2026.³

¹ 47 C.F.R. § 25.117.

² See *Application of Intelsat LLC for Authority to Operate, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit*, Memorandum Opinion Order and Authorization, 15 FCC Rcd 15460 (2000), *recon. denied*, 15 FCC Rcd 25234 (2000), *further proceedings*, 16 FCC Rcd 12280 (2001) and 19 FCC Rcd 5266 (2004) (“*Intelsat Licensing Orders*”). Intelsat 10-02, known then as Alpha 2, was one of 10 new satellites authorized as part of the *Intelsat Licensing Orders*.

³ Specifically, to the extent necessary, Intelsat seeks an extension of the previously granted waivers of 47 C.F.R. §§ 25.140(a) (previously codified at 47 C.F.R. § 25.140(b)(2)) and 25.202(g). See *Intelsat Licensing Orders*, 15 FCC Rcd 15460, ¶ 153 and Appendix C. Due to rule changes since the *Intelsat Licensing Orders*, Intelsat is not seeking waiver extension for the following Commission rules, which have been eliminated: 47 C.F.R. §§ 25.210(a)(1), 25.210(a)(3), 25.210(i), and 25.211(a) (rule sections as of the time of the 2000 grant).

In accordance with the Commission's rules,⁴ this application has been filed electronically as an attachment to FCC Form 312. Intelsat incorporates by reference the information previously provided regarding the operations of Intelsat 10-02⁵ and, because this is the first modification of Intelsat 10-02's authorization since 2003, provides a Schedule S. Consistent with Section 1.62 of the Commission's rules,⁶ Intelsat will continue to operate the Intelsat 10-02 satellite pursuant to the terms and conditions of its expiring license until the Commission acts on this request.

I. REQUEST FOR EXTENSION OF LICENSE TERM

Intelsat seeks to extend the license term for the Intelsat 10-02 satellite through December 2026. The Intelsat 10-02 satellite was placed into service on August 16, 2004.⁷ Pursuant to Sections 25.121(a) and (d)(1) of the Commission's rules,⁸ the license term for Intelsat 10-02 will expire on August 16, 2019. This expiration date is well before the expected end of service life of the satellite, which was most recently estimated to be the end of 2021, assuming no inclined-orbit operation. Inclined orbit operation will extend Intelsat 10-02's expected end of service life an additional five years. To accommodate the planned inclined orbit operation of Intelsat 10-02,

⁴ 47 C.F.R. § 25.117(c).

⁵ *See supra* n. 2.

⁶ 47 C.F.R. § 1.62 (permitting continued operations by a licensee where there is a proper and timely pending application for renewal of the license).

⁷ *See* Letter from Jennifer D. Hindin, Attorney for Intelsat LLC, to Ms. Marlene H. Dortch, Federal Communications Commission, File No. SAT-LOA-20000119-00028 (Sep. 9, 2004) (certifying that the Intelsat 10-02 spacecraft had been successfully placed into orbit).

⁸ 47 C.F.R. §§ 25.121(a), (d)(1).

Intelsat requests the Commission extend the license term through December 2026.⁹ To the extent the satellite's projected end of service life is extended in the future, Intelsat will seek an additional extension of the license term.

II. POST-MISSION DISPOSAL PLAN

Extending the license term of Intelsat 10-02 will not affect the satellite's post-mission disposal plan. At the end of the Intelsat 10-02 mission, Intelsat will dispose of the satellite by moving it to an altitude of at least 282.2 kilometers above the geostationary arc. For that purpose, Intelsat has reserved 54.6 kilograms of fuel.

In calculating the disposal orbit, Intelsat used simplifying assumptions as permitted under the Commission's *Orbital Debris Report and Order*.¹⁰ The effective area to mass ratio (Cr^*A/M) of the Intelsat 10-02 spacecraft is 0.043 m²/kg, resulting in a minimum perigee disposal altitude under the Inter-Agency Space Debris Coordination Committee formula of 282.2 kilometers above the geostationary arc. Accordingly, the Intelsat 10-02 planned disposal orbit complies with the FCC's rules.

The reserved fuel figure was determined by the spacecraft manufacturer and provided for in the propellant budget. This figure was calculated considering the expected mass of the

⁹ The Commission is currently considering a five-year limit per license extension in its Orbital Debris Proceeding. See *Mitigation of Orbital Debris in the New Space Age et al.*, Notice of Proposed Rulemaking and Order on Reconsideration, IB Docket No. 18-313 *et al.*, FCC 18-159, ¶ 66 (Nov. 19, 2018) ("Orbital Debris NPRM"). As Intelsat has informed the Commission, in some countries, such as Brazil, landing rights are limited to the duration of the initial U.S. license term plus the length of a single extension. See *id.*, Intelsat License LLC Comments, at 10-11 (Apr. 5, 2019). As explained in more detail below, license extension of less than seven years would inadvertently negatively affect Intelsat's ability to obtain landing rights for Intelsat 10-2 in South America.

¹⁰ *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004).

satellite at the end of life and the required delta-velocity to achieve the desired orbit. The fuel gauging uncertainty has also been considered in these calculations.

At the completion of the mission and upon disposal of the spacecraft, to the extent possible, Intelsat will ensure the removal of stored energy on the spacecraft by depleting all propellant tanks, venting all pressurized systems, leaving the batteries in a permanent discharge state, and by ensuring that all active units on the Intelsat 10-02 satellite are turned off. Intelsat 10-02 is an EADS-Astrium Eurostar 3000 model spacecraft, which was not designed to vent all pressurized systems. The helium tank was sealed by firing a pyrotechnic valve following transfer orbit. Consequently, a de minimus amount of helium cannot be vented at end of life. Nevertheless, Intelsat will be compliance with the Commission's end of life venting requirement.¹¹

In addition, EADS-Astrium, the satellite's manufacturer, has designed the spacecraft so that risk of accidental explosion causing additional orbital debris is minimal. First, the risk of accidental explosion 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. Intelsat 10-02 has one helium tank with a volume of 178 liters. The estimated mass and pressure of residual helium in the tank will be 1339 grams and 4655 kPa (675.2psia) at 24.8° 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.¹²

¹¹ In 2015, the Commission revised Section 25.283(c) to "permit a satellite to maintain de minimis propellant or pressurant upon disposal." *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Second Report and Order, 30 FCC Rcd 14713, ¶ 359 (2015).

¹² To the extent the Commission finds the residual helium not to be de minimus, Intelsat requests waiver of Sections 25.114(d)(14)(ii) and 25.283(c) on hardship grounds. Intelsat 10-02 is an in-orbit spacecraft, and as such, a design change cannot be accomplished at this time.

III. REQUEST FOR EXTENSION OF WAIVERS

Intelsat requests, to the extent necessary, that waivers previously granted for Intelsat 10-02 continue to apply during the license extension. Specifically, Intelsat requests continued waivers of Section 25.140(a), requiring compliance with the two-degree spacing requirements, and Section 25.202(g), requiring operation of telemetry, tracking, and command (“TT&C”) communications at the edge of assigned frequency bands.¹³

IV. REQUEST FOR GRANT WITHOUT MILESTONES OR A BOND

Because Intelsat 10-02 is already in-orbit and operating, grant of this modification application is not subject to milestone conditions, and Intelsat is not required to post a bond under Sections 25.164(a) and 25.165 of the Commission’s rules.¹⁴

V. INTELSAT ACCEPTS SECTION 316 PETITION CONDITIONS

Intelsat understands and accepts that authorization to continue operating Intelsat 10-02 at 1.0° W.L. will be conditioned as follows:

- Intelsat shall remain a signatory to the Public Services Agreement between Intelsat and the International Telecommunications Satellite Organization

Avoiding such hardship is particularly appropriate where, as here, the licensee acted in good faith. Specifically, the Intelsat 10-02 satellite was licensed, launched, and operational prior to adoption of the fuel venting rule.

¹³ See 47 C.F.R. §§ 25.140(a) (previously codified at 47 C.F.R. § 25.140(b)(2)) & 25.202(g). See also *Intelsat Licensing Orders*, 15 FCC Rcd 15460, ¶ 153 and Appendix C (granting waiver of Sections 25.140(b)(2), 25.202(g), 25.210(a)(1) & (a)(3), 25.210(i), and 25.211(a) of the FCC’s rules for the Intelsat 10-02 satellite (formerly known as the Alpha 2 satellite)). Since adoption of the *Intelsat Licensing Orders*, the FCC has rescinded Sections 25.210(a)(1) & (a)(3), 25.210(i), and 25.211(a). Accordingly, Intelsat requests only extension of the previously granted waivers for Sections 25.140(a) (previously codified at Section 25.140(b)(2)) and 25.202(g) to the extent necessary.

¹⁴ See 47 C.F.R. §§ 25.164(a) and 25.165.

(“ITSO”) that was approved by the ITSO Twenty-Fifth Assembly of Parties, as amended.

- 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.¹⁵

VI. PUBLIC INTEREST SHOWING

Grant of this modification application to extend the license term would serve the public interest by enabling customers to receive service from Intelsat 10-02 at the 1.0° W.L. orbital location beyond the current license term’s August 16, 2019 expiration date. The Intelsat 10-02 satellite’s subsystems and solar panels are functioning normally, and there are no single points of failure on Intelsat 10-02 that would result in an inability to de-orbit the satellite. Additionally, the satellite’s TT&C functions are operating normally and most of the payload is operational. Extending the license term will promote the continued efficient use of orbital resources and is consistent with prior decisions by the Commission to extend satellite license terms.¹⁶

Additionally, extension of the satellite’s license term through December 2026 is necessary to ensure that Intelsat may continue to provide service to customers until the expected end of Intelsat 10-02’s service life. Intelsat 10-02 provides service to customers in Brazil. Under Brazilian law, landing rights are granted for the term specified in the original license, with allowances for one renewal. Landing rights for Intelsat 10-02 are therefore limited to August 16,

¹⁵ See *Petition of the International Telecommunications Satellite Organization under Section 316 of the Communications Act, as Amended*, Order of Modification, 23 FCC Rcd 2764, ¶¶ 11-13 (2008).

¹⁶ 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).

2019, the initial license expiration date, plus the length of one extension. Should the Commission limit extension to less than the requested term, Intelsat likely would be required to undergo a new and lengthy approval process, provide a renewed coordination analysis of satellite network filings, and submit additional licensing and spectrum fees in order to continue serving Brazil with Intelsat 10-02. Accordingly, limiting license extension to anything less than the estimated end of operational life—including expected inclined orbit operations—would inadvertently put at risk Intelsat 10-02’s existing landing rights in Brazil and would be contrary to the public interest.¹⁷

VII. 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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¹⁷ See Orbital Debris NPRM, Comments of Intelsat License LLC, at 10-11 (filed Apr. 5, 2019) and Comments of the Satellite Industry Association, at 6-7 (filed Apr. 5, 2019).

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 2012, the International Bureau authorized the transfer of control of Intelsat.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 *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, 27 FCC Rcd 5,226 (2012). The transfer of control was fully consummated on June 14, 2018. See Letter from Jennifer D. Hindin, Counsel for Intelsat, to Marlene H. Dortch, FCC, IB Docket No. 11-205 (filed June 14, 2018).

Exhibit B

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 Ventures S.à r.l., a Luxembourg company, which is in turn wholly owned by Intelsat Alliance LP, a Delaware limited partnership. Intelsat Alliance LP is indirectly wholly owned by Intelsat Jackson Holdings S.A., a Luxembourg company. Intelsat Jackson Holdings S.A. is wholly owned by Intelsat Connect Finance S.A., a Luxembourg company, which in turn is wholly owned by Intelsat Envision Holdings LLC, a Delaware limited liability company. Intelsat Envision Holdings LLC 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, which in turn is wholly owned by Intelsat Holdings S.A., a Luxembourg company. Intelsat Holdings S.A. is wholly owned by 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-20180627-00048, SAT-T/C-20180627-00049, SES-T/C-20180627-01430, SES-T/C-20180627-01436, SES-T/C-20180627-01433 (granted June 29, 2018), 0008216564 (granted June 28, 2018) and 0037-EX-TU-2018 (granted June 29, 2018).