

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of

Intelsat License LLC

Application to Modify Authorization for
Galaxy 13 (S2386)

File No. SAT-MOD- _____

**APPLICATION OF INTELSAT LICENSE LLC
TO MODIFY AUTHORIZATION FOR GALAXY 13**

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 Galaxy 13 (Call Sign S2386), a C-band satellite² operating at 127.0° W.L.³ Specifically, Intelsat seeks to extend the license term for the Galaxy 13 satellite through December 2030.

¹ 47 C.F.R. § 25.117.

² The satellite also contains a Japanese-licensed Ku-band payload known as Horizons I. Horizons-1 Satellite LLC has been granted U.S. market access for Horizons-1. *See Satellite Policy Branch Information; Actions Taken*, Report No. SAT-01341, File No. SAT-PPL-20180727-00057 (Aug. 31, 2018) (Public Notice).

³ *See* PanAmSat Licensee Corp., Order and Authorization, 18 FCC Rcd 19680, ¶ 7 (Sat. Div. 2003) (authorizing launch and C-band operation of Galaxy 13). The licenses originally held by PanAmSat Licensee Corp. were assigned in 2010 to Intelsat North America, which later changed its name to Intelsat Licensee LLC. *See Satellite Policy Branch Information; Actions Taken*, Report No. SAT-00746, File No. SAT-ASG-20101203-00252 (Dec. 29, 2010).

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 Galaxy 13⁵ and provides a Schedule S. Consistent with Section 1.62 of the Commission's rules,⁶ Intelsat will continue to operate the Galaxy 13 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.

I. REQUEST FOR EXTENSION OF LICENSE TERM

Intelsat seeks to extend the license term for the Galaxy 13 satellite through December 2030. The Galaxy 13 satellite was placed into service on January 1, 2004.⁷ Pursuant to Sections 25.121(a) and (d)(1) of the Commission's rules,⁸ the license term for Galaxy 13 will expire on January 1, 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 2025, assuming no inclined-orbit operation; inclined-orbit operation would extend Galaxy 13's expected end of service life an additional five years. In order to accommodate the planned inclined-orbit operation of Galaxy 13, Intelsat is requesting that the license term be extended through December 2030. 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.

⁴ 47 C.F.R. § 25.117(c).

⁵ *See supra* n. 3.

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 Joseph A. Godles, Attorney for PanAmSat Licensee Corp., to Ms. Magalie R. Salas, Federal Communications Commission, File No. SAT-LOA-19991207-00118 (Jan. 30, 2004) (certifying that the Galaxy 13 spacecraft had been successfully placed into orbit).

⁸ 47 C.F.R. §§ 25.121(a), (d)(1).

II. PUBLIC INTEREST SHOWING

Grant of this modification application to extend the license term will serve the public interest by enabling customers to continue receiving service from Galaxy 13 at the 127.0° W.L. orbital location. The Galaxy 13 satellite's subsystems and solar panels are functioning normally, and there are no single points of failure on Galaxy 13 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 recent decisions by the Commission to extend satellite license terms.⁹

III. POST-MISSION DISPOSAL PLAN

At the end of the Galaxy 13 mission, Intelsat will dispose of the satellite by moving it to an altitude of at least 270.2 kilometers above the geostationary arc. For that purpose, 33 kilograms of xenon propellant has been reserved.

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 ($Cr \cdot A/M$) of the Galaxy 13 spacecraft is 0.032 m²/kg, resulting in a minimum perigee disposal altitude under the Inter-Agency Space Debris Coordination Committee formula of 270.1 kilometers above the geostationary arc. Accordingly, the Galaxy 13 planned disposal orbit complies with the FCC's rules.

⁹ See e.g., *Policy Branch Information; Actions Taken*, Report No. SAT-01156, File No. SAT-MOD-20160219-00019 (May 6, 2016) (Public Notice) (announcing grant of Intelsat's application seeking extension of license for Intelsat 1R, a station-kept satellite, based on the satellite's current projected end of service including future inclined-orbit operation).

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

The reserved fuel figure was determined by the spacecraft manufacturer and provided for in the propellant budget. This figure was calculated taking into account the expected mass of the satellite at the end of life and the required delta-velocity to achieve the desired orbit. The fuel gauging uncertainty has also been taken into account 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 Galaxy 13 satellite are turned off. Galaxy 13 is a Boeing model 601 HP spacecraft, which was not designed to vent all pressurized systems. The pressurant that was used during orbit raising of Galaxy 13 was permanently isolated from the propulsion system by the firing a pyrotechnic valve at beginning of on-orbit life such that a *de minimis* amount of residual gas (about 5%) cannot be vented at end of life.¹¹

In addition, Boeing, 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 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. Galaxy 13 has two helium tanks with a volume of 43.42 liters each. The estimated mass and pressure of residual helium in each tank will be 138.05 grams and 1849.9 kPa (268.3 psia) at 21.2° C,

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). To the extent the Commission finds 5% not to be *de minimis*, Intelsat requests waiver of Sections 25.114(d)(14)(ii) and 25.283(c) on hardship grounds. Galaxy 13 is an in-orbit spacecraft, and 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 Galaxy 13 satellite was licensed, launched, and operational prior to adoption of the fuel venting rule.

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.

Boeing has also designed the helium 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 structurally damage 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.

IV. 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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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).