

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of

Intelsat License LLC

Application for Authority to Launch
and Operate Galaxy 36, a Replacement
Satellite with New Frequencies, at
89.0° W.L.

File No. SAT-RPL-_____

**APPLICATION FOR AUTHORITY TO LAUNCH AND OPERATE GALAXY 36,
A REPLACEMENT SATELLITE WITH NEW FREQUENCIES, AT 89.0° W.L.**

Intelsat License LLC (“Intelsat”), pursuant to Section 25.114 of the Federal Communications Commission’s (“FCC” or “Commission”) rules,¹ hereby applies to launch and operate a C/Ku-band replacement satellite with new frequencies, to be known as Galaxy 36, at the 89.0° W.L. orbital location.² Galaxy 36 is scheduled for launch in Q4 2022 and will replace

¹ 47 C.F.R. § 25.114.

² The Commission’s rules permit replacement satellite applications in the 3700-4200 MHz band. 47 C.F.R. § 2.106 n. NG182; *see also Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, Report and Order and Order of Proposed Modification, 35 FCC Rcd 2343, 2391 ¶ 115 n. 327 (2020) (“*C-band Order*”).

Galaxy 28 (S2160), which is currently operating at 89.0° W.L.³ Galaxy 36 will operate on a non-common carrier basis.⁴

As demonstrated below, Intelsat is legally and technically qualified to launch and operate its proposed replacement satellite with new frequencies. Moreover, grant of this application will serve the public interest by ensuring continuity of service at the 89.0° W.L. orbital location to C-band customers during and after the clearing of the lower 300 MHz for terrestrial mobile operations pursuant to the *C-band Order* and by adding additional Ku-band frequencies at the location. In accordance with the Commission's requirements,⁵ this application has been filed electronically as an attachment to FCC Form 312 and Schedule S.

I. INTELSAT IS QUALIFIED TO HOLD THE AUTHORIZATION REQUESTED HEREIN

A. Legal Qualifications

Intelsat is legally qualified to hold the space station authorization requested in this application. The information provided in the attached Form 312 demonstrates Intelsat's compliance with the Commission's basic legal qualifications. In addition, Intelsat already holds

³ See *Intelsat License LLC, Application to Modify Authorization for Galaxy 28 (S2160)*, Stamp Grant, File No. SAT-MOD-20191126-00141 (Apr. 24, 2020) ("*Galaxy 28 Modification Authorization*"). In 2014, the Ka-band payload on Galaxy 28 was assigned to ViaSat, Inc. See *Policy Branch Information; Actions Taken*, Report No. 01009, File No. SAT-ASG-20130515-00070 (Apr. 11, 2014). Galaxy 36 and Galaxy 28 will be collocated at 89.0° W.L. and Intelsat will internally coordinate the operations of both satellites.

⁴ Section 310(b) is not applicable in the instant case because Galaxy 36, like all other satellites licensed to Intelsat, will operate on a non-common carrier basis. See *Applications of The News Corp. Ltd. and The DIRECTV Group, Inc. (Transferors) and Constellation, LLC, Carlyle PanAmSat I, LLC, Carlyle PanAmSat II, LLC, PEP PAS, LLC and PEOP PAS, LLC (Transferees) for Authority to Transfer Control of PanAmSat Licensee Corp.*, Public Notice, 19 FCC Rcd 15424, 15425 n.5 (2004).

⁵ 47 C.F.R. § 25.114(c).

multiple Commission satellite licenses, and its legal qualifications are a matter of record before the Commission.⁶

B. Technical Qualifications

In the attached Form 312, Schedule S, and Engineering Statement, Intelsat demonstrates that it is technically qualified to hold the authorization requested herein. Specifically, Intelsat provides the information currently required by Section 25.114 of the Commission's rules. In addition, the Engineering Statement provides information demonstrating Intelsat's compliance with the Commission's orbital debris mitigation rules.⁷

II. OPERATIONAL FREQUENCIES

The following chart shows the frequencies that will be used by the Galaxy 36 satellite at 89.0° W.L. and the frequencies that are utilized by Galaxy 28.

	Galaxy 36	Galaxy 28
3700-4200 MHz	✓	✓
5925-6425 MHz	✓	✓
10700-11200 MHz	✓	
11700-12200 MHz	✓	✓
12750-13250 MHz	✓	
13750-14000 MHz	✓	
14000-14500 MHz	✓	✓

⁶ See *Constellation, LLC, Carlyle PanAmSat I, LLC, Carlyle PanAmSat II, LLC, PEP PAS, LLC, and PEOP PAS, LLC, Transferors and Intelsat Holdings, Ltd., Transferee, Consolidated Application for Authority to Transfer Control of PanAmSat Licensee Corp. and PanAmSat H-2 Licensee Corp.*, Memorandum Opinion and Order, 21 FCC Rcd 7368, 7381, ¶ 23 (2006) ("The Commission previously has determined that PanAmSat and Intelsat are qualified to hold licenses.").

⁷ 47 C.F.R. § 25.114(d)(14); see also *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004).

All of the existing C- and Ku-band frequencies authorized on Galaxy 28 are also on Galaxy 36. Additionally, Galaxy 36 contains additional Ku-band frequencies, 10700-11200 MHz, 12750-13250 MHz, and 13750-14000 MHz which are not on the Galaxy 28 satellite.

The Galaxy 36 design allows Intelsat to select the satellite's telemetry, tracking, and control ("TT&C") frequencies within the 3700-4200 MHz (space-to-Earth) and 5925-6425 MHz (Earth-to-space) bands in 100 kHz steps. Intelsat seeks authority to operate TT&C anywhere within these bands consistent with the satellite's design.⁸

Following the completion of the FCC's C-band transition, the Galaxy 36 satellite will provide service in the 3700-4000 MHz band only to earth stations outside the contiguous United States, on a non-protected basis to earth stations on vessels and Intelsat's two consolidated TT&C/gateway sites in Brewster, Washington and Andover, Maine.⁹

III. GRANT OF THIS APPLICATION WILL SERVE THE PUBLIC INTEREST

The Commission recognizes a "replacement expectancy" in orbital locations in order to protect the large investments made by satellite operators. The agency has stated,

[G]iven the huge costs of building and operating satellite space stations, there should be some assurance that operators will be able to continue to serve their customers. The Commission has therefore stated that, when the orbit location remains available for a U.S. satellite with the technical characteristics of the proposed replacement satellite, it will generally authorize the replacement satellite at the same location.¹⁰

⁸ See Engineering Statement at § 2.3.

⁹ See *C-band Order* at ¶¶ 57, 152; 47 C.F.R. § 2.106, fn. NG182, NG457A. Intelsat has sought reconsideration to allow its continued access to 500 MHz at these consolidated international TT&C/Gateway sites on a protected basis to ensure C-band service continuity to customers on its international C-band satellites. See Intelsat License LLC Petition for Reconsideration, GN Docket No. 18-122 (May 26, 2020).

¹⁰ *Columbia Communications Corporation Authorization to Launch and Operate a Geostationary C-band Replacement Satellite in the Fixed-Satellite Service at 37.5° W.L.*, Memorandum Opinion and Order, 16 FCC Rcd 20176, 20178, ¶ 7 (2001) (citing *Assignment of*

In this case, Intelsat holds a replacement expectancy for the C- and Ku-band frequencies at the 89.0° W.L. orbital location because the Commission authorized Intelsat to operate Galaxy 28 at that location in those bands.¹¹ As demonstrated in the Technical Exhibit and Schedule S, Galaxy 36 is technically consistent with Galaxy 28.¹²

In addition, grant of this application will serve the public interest by ensuring continuity of service to consumers from the 89.0° W.L. orbital location. Intelsat stands ready to deploy a replacement satellite to the 89.0° W.L. orbital location before Galaxy 28 reaches the end of its useful life or is relocated; Galaxy 36 is currently under construction and is scheduled to launch later this year. The Commission has stated that granting replacement applications ensures that service will be provided to consumers as efficiently as possible because the current licensee will be familiar with the service requirements and, given its experience, should be able to deploy a replacement satellite in the shortest possible time.¹³

Orbital Locations to Space Stations in Domestic Fixed-Satellite Service, Memorandum Opinion and Order, 3 FCC Rcd 6972, 6976 n.31 (1988) and *GE American Communications, Inc.*, Order and Authorization, 10 FCC Rcd 13775, 13775 ¶ 6 (1995)).

¹¹ See *Galaxy 28 Modification Authorization*.

¹² *Amendment of the Commission's Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760, 10858, ¶ 257 (2003) (“We do not require replacement satellites to be technically *identical* to the existing satellite. We recognize that next-generation satellites will incorporate satellites with technical advancements made since the previous generation satellite was launched. We do not intend to change this policy, which facilitates state-of-the-art systems. Rather, we will continue to assess only whether operations of the replacement satellite will be consistent with our international coordination obligations pursuant to regulations promulgated by the International Telecommunication Union.”) (emphasis in original; internal citations omitted).

¹³ See *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, ¶ 83 (2003) (“Repairing or even replacing a malfunctioning satellite, for all its complexity, requires less time than designing and constructing a new system. Even in the worst case where a satellite is destroyed, a licensee can ordinarily replace a lost satellite with a ground spare at the next available launch window, or procure a

Grant of this application will further serve the public interest by enabling accelerated clearing of a portion of the C-band spectrum in accordance with the *C-Band Order*.¹⁴ As described in detail in Intelsat's *Final Transition Plan*, the Galaxy 36 satellite will help create sufficient capacity to repack existing services into less spectrum and effectuate spectrum clearing.¹⁵ The satellite, which is scheduled to launch in Q4 2022, will enable Intelsat to more intensively use the 4000-4200 MHz band, thereby facilitating the successful transition of existing services to the upper 200 MHz of C-band spectrum ahead of the clearing deadlines without any disruption to customers.¹⁶

Finally, the Galaxy 36 satellite will allow Intelsat to complement its service offering in the region by adding additional Ku-band capacity at the location. This additional capacity will benefit consumers and thus serves the public interest.

IV. USE OF THE 3700-4000 MHZ, 10700-11200 MHZ AND 13750-14500 MHZ

Intelsat understands that operations in the 3700-4000 MHz, 10700-11200 MHz and 13750-14250 MHz frequency bands are subject to certain limitations and obligations, which Intelsat accepts and will fulfill. Specifically, for operations in the 3700-4000 MHz band, Intelsat accepts the following conditions:

- Operations in the 3700-4000 MHz band (space-to-Earth), within the contiguous United States, are subject to the terms of the *C-band Order*, including United States Table of Frequency Allocations, footnote NG182,

technically identical satellite in an expedient manner since it would have already completed the complex design process.”).

¹⁴ *C-Band Order*, ¶ 199.

¹⁵ See Letter from Michelle V. Bryan, Executive Vice President, General Counsel and Chief Administrative Officer, Intelsat US LLC, to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 18-122 and 20-173, at 18-19 (Aug. 14, 2020).

¹⁶ *Id.* at 18.

and footnote NG457A, future actions in the proceeding, and actions on delegated authority taken in accordance with the *C-band Order*.

For operations in the 10700-11200 MHz band, Intelsat accepts the following conditions:

- Intelsat's use of the 10700-11200 MHz 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.

For operations in the 13750-14500 MHz frequency band, Intelsat accepts the following conditions:

- In the 13750-14000 MHz band (Earth-to-space), receiving space stations in the fixed-satellite service shall not claim protection from radiolocation transmitting stations operating in accordance with the United States Table of Frequency Allocations.
- Pursuant to footnote US337 of the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, any earth station in the United States and its possessions communicating with the Galaxy 36 space station in the 13750-13800 MHz band (Earth-to-space) is required to coordinate through National Telecommunications and Information Administration's ("NTIA") Interdepartment Radio Advisory Committee's ("IRAC") Frequency Assignment Subcommittee ("FAS") to minimize interference to the National Aeronautics and Space Administration ("NASA") Tracking and Data Relay Satellite System, including crewed space flight.
- Operations of any earth station in the United States and its possessions communicating with the Galaxy 36 space station in the 13750-14000 MHz band (Earth-to-space) shall comply with footnote US356 of United States Table of Frequency Allocations, 47 C.F.R. § 2.106, US356, which specifies a mandatory minimum antenna diameter of 4.5 meters and a non-mandatory minimum and maximum equivalent isotropically radiated powers ("e.i.r.p."). Operations of any earth station located outside the United States and its possessions communicating with the Galaxy 36 space station in the 13750-14000 MHz band (Earth-to-space) shall be consistent with footnote 5.502 to the International Telecommunication Union ("ITU") Radio Regulations, which allows a minimum antenna diameter of 1.2 meters for earth stations of a geostationary satellite orbit network and specifies mandatory power limits.
- Operators of earth stations accessing the Galaxy 36 space station in the 13750-14000 MHz band are encouraged to cooperate voluntarily with NASA

in order to facilitate continued operation of NASA's Tropical Rainfall Measuring Mission ("TRMM") satellite.

- Intelsat's use of the 14470-14500 MHz band (Earth-to-space) is subject to footnote US342 to the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, US342, which urges applicants for airborne or space station assignments to take all practicable steps to protect radio astronomy service from harmful interference.

V. ITU COST RECOVERY

Intelsat is aware that processing fees are currently charged by the ITU for satellite filings, and that Commission applicants are responsible for any and all fees charged by the ITU.¹⁷ Intelsat unconditionally accepts this requirement and responsibility to pay any ITU cost recovery fees associated with the ITU filings that the Commission makes on behalf of Intelsat for the satellite proposed in this application, as well as any ITU filings associated with any satellite system for which Intelsat may request authorization at a later date.

VI. MILESTONE AND BOND REQUIREMENTS

Galaxy 36 will be subject to the milestone and bond requirements set forth in Sections 25.164 and 25.165 of the Commission's rules because the 10700-11200 MHz, 12750-13250 MHz, and 13750-14000 MHz frequencies are included on Galaxy 36 but are not on the Galaxy 28 satellite it is replacing.¹⁸

¹⁷ See *Implementation of ITU Cost Recovery Charges for Satellite Network Filings*, Public Notice, DA 01-2435 (Oct. 19, 2001).

¹⁸ 47 C.F.R. §§ 25.164 and 25.165.

VII. CONCLUSION

Based on the foregoing, Intelsat respectfully requests that the Commission grant this replacement satellite application.

Respectfully submitted,

Intelsat License LLC

By: /s/ Cynthia J. Grady

Jennifer D. Hindin
WILEY REIN LLP
2050 M St NW
Washington, DC 20036

W. Ray Rutngamlug
Associate General Counsel
Intelsat US LLC

Cynthia J. Grady
Assistant General Counsel
Intelsat US LLC

June 7, 2022

Exhibit A

FCC Form 312, Response to Question 34: Foreign Ownership

The Commission previously approved Intelsat's ownership structure, including foreign ownership.¹ There have been no material changes to Intelsat's ownership since the *2022 Intelsat Order*.

¹ See *Intelsat S.A., as debtor-in-possession (Transferor) and New TopCo S.A. (Transferee)*, Order, IBFS File No. SAT-ASG-20210826-00117, IB Docket No. 21-375, DA-22-162 (rel. Feb. 16, 2022) ("*2022 Intelsat Order*").

Exhibit B

FCC Form 312, Response to Question 40: Officers, Directors, and Ten Percent or Greater Shareholders

Intelsat License LLC is a Delaware limited liability company. The officers and directors/managers of Intelsat License LLC are as follows:

Officers:

José Toscano, Deputy Chairman
Michelle Bryan, General Counsel, Chief
Administrative Officer, and Secretary
Mirjana Hervy, Director, Finance

Board of Managers:

José Toscano
Michelle Bryan

The business address of all Intelsat License LLC officers and members of the Board of Managers is: 7900 Tysons One Place, McLean, Virginia 22102.

Intelsat License LLC is a Delaware limited liability company that is indirectly wholly owned by Intelsat S.A. (formerly named Intelsat Emergence S.A.). Specifically, Intelsat License LLC is wholly owned by Intelsat License Holdings LLC, 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 managed by one general partner (Intelsat Genesis GP LLC, a Delaware limited liability company) and two limited partners (Intelsat Genesis Inc., a Delaware corporation, and Intelsat Jackson Holdings S.A., a Luxembourg company). Intelsat Genesis GP LLC is wholly owned by Intelsat Genesis Inc., which is wholly owned by Intelsat Jackson Holdings S.A. Intelsat Jackson Holdings S.A. is wholly owned by Intelsat Connect Finance S.à r.l., 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.à r.l., a Luxembourg company. Intelsat (Luxembourg) S.à r.l. is wholly owned by Intelsat Investments S.à r.l., a Luxembourg company, which in turn is wholly owned by Intelsat Holdings S.à r.l., a Luxembourg company. Intelsat 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.

Pacific Investment Management Company LLC (“PIMCO”), a Delaware limited liability company, serves as the manager or investment advisor for a number of investment funds and other investment vehicles that each hold less than 10% of the voting and non-voting equity interests in Intelsat S.A. However, to the best of Intelsat’s knowledge, as of February 23, 2022, the aggregate total of the voting and non-voting equity interests in Intelsat S.A. held by PIMCO-managed funds and certain parent entities of PIMCO exceeded 10%. Details regarding PIMCO are listed below.

PIMCO

Name: Pacific Investment Management Company LLC
Address: 650 Newport Center Drive, Newport Beach, CA
92660
Citizenship: United States (Delaware)
Indirect Voting Interest: Approximately 32.99%
Indirect Non-Voting Interest: Approximately 32.99%

A complete list of the investment funds and entities collectively controlling a 10% or greater indirect voting and indirect non-voting interest in Intelsat S.A. is set forth in Intelsat's 2022 application for consent to the assignment and transfer of control of authorizations.¹

¹ See Application for Assignment and Transfer of Control of Authorizations held by Intelsat License LLC, as debtor-in-possession, IBFS File No. SAT-ASG-20210826-00117 (filed Aug. 26, 2021).