Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of Intelsat License LLC Application for Authority to Launch and Operate Intelsat 40e at 91.0º W.L.	File No. SAT-LOA-_____

APPLICATION FOR AUTHORITY TO LAUNCH AND OPERATE INTELSAT 40e AT 91.0º 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 new high-throughput Ku/Ka-band satellite, to be known as Intelsat 40e, at the 91.0° W.L. (269.0º E.L.) orbital location ("Application").[2] Intelsat 40e is scheduled for launch in 3Q 2022 and will be collocated with Galaxy 17 (Call Sign S2715), which will continue to operate at 91.0° W.L.[3] Intelsat 40e will operate on a non-common carrier basis.[4]

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1 47 C.F.R. § 25.114.

2 Intelsat 40e will also host the National Aeronautics and Space Administration's ("NASA") Tropospheric Emissions: Monitoring of Pollution ("TEMPO") instrument, which will measure air quality from space. *See* NASA, *Satellite Host Named for NASA Air Pollution Sensor,* Feb. 3, 2020, *available at*: https://www.nasa.gov/feature/langley/satellite-host-named-for-nasa-air-pollution-sensor.

3 *See Policy Branch Information; Actions Taken*, Report No. SAT-00439, File No. SAT-RPL-20061219-00155 (Apr. 27, 2007) (Public Notice).

4 Section 310(b) is not applicable to this Application because Intelsat 40e, 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, et al. (Transferees) for Authority to Transfer Control of PanAmSat Licensee Corp.*, Public Notice, 19 FCC Rcd 15424, 15425 (n. 5) (Int'l Bur. 2004).

As demonstrated below, Intelsat is legally and technically qualified to launch and operate its proposed satellite with new frequencies. Moreover, grant of this application will serve the public interest by providing additional Ku- and Ka-band capacity for services to North and Central American customers. 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 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.[7] In

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5 47 C.F.R. § 25.114(c).

6 *See Constellation, LLC, Carlyle PanAmSat I, LLC, et al., 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 (rel. June 19, 2006) ("The Commission previously has determined that PanAmSat and Intelsat are qualified to hold licenses.").

7 47 C.F.R. § 25.114(c).

addition, the Engineering Statement provides information demonstrating Intelsat's compliance with the Commission's orbital debris mitigation rules.[8]

C. Operational Frequencies

The following chart shows the frequencies that will be used by the Intelsat 40e satellite, as well as the frequencies that are currently used by the Galaxy 17 satellite, at 91.0º W.L.

	Intelsat 40e	**Galaxy 17**
5925-6425 MHz		✓
3700-4200 MHz		✓
10825-10950 MHz	✓	
10950-11700 MHz	✓	
11700-12200 MHz	✓	✓
14000-14500 MHz	✓	✓
17800-19400 MHz[9]	✓	
19600-20200 MHz	✓	
27500-29100 MHz[10]	✓	
29250-30000 MHz[11]	✓	

[8] 47 C.F.R. § 25.114(d)(14); *see also Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004).

[9] The 17800-18300 MHz band is allocated to Fixed Satellite Services ("FSS") on a secondary basis and Intelsat understands that its operations in this band are also subject to power flux-density limits. 47 C.F.R. § 2.106, fn. US334. Further, Intelsat acknowledges that the 18800-19300 MHz and 28350-29100 MHz bands are allocated to geostationary satellite orbit ("GSO") FSS on an unprotected, non-interference basis vis-à-vis non-geostationary satellite FSS systems. 47 C.F.R. § 2.106, fn. NG165.

[10] Intelsat acknowledges that the 27500-28350 MHz band is allocated to GSO FSS on a secondary basis to the Upper Microwave Flexible Use Service, except for FSS operations associated with earth stations authorized pursuant to §25.136. *See* 47 C.F.R. § 25.202(a)(1)(i).

[11] The 29100-29500 MHz band is allocated to the mobile-satellite service ("MSS") feeder links and FSS on a co-primary basis. Intelsat understands that its earth station uplink operations in 29250-29500 MHz will require coordination with the incumbent MSS feeder link operator.

The Intelsat 40e satellite will increase capacity at 91.0° W.L. in the conventional Ku-band frequencies of 11700-12200 MHz and 14000-14500 MHz, while adding new extended Ku- and Ka-band capacity in the 10825-10950 MHz, 10950-11700 MHz, 17800-19400 MHz, 19600-20200 MHz, 27500-29100 MHz, and 29250-30000 MHz frequencies which are not on the Galaxy 17 satellite.[12]

The telemetry, tracking, and control ("TT&C") frequencies for Intelsat 40e are as follows: 10934.95-10965.05 MHz, 10950.75 MHz, 10951.25 MHz, 10951.75 MHz, and 10952.25 MHz (Earth-to-space); and 14000-14030 MHz (space-to-Earth).[13]

D. Waiver Request

Intelsat requests waiver of Footnote NG52 of the Table of Allocations, which restricts the use of the 10950-11200 MHz and 11450-11700 MHz bands by the non-federal GSO FSS to international systems only.[14]

Under Section 1.3 of the Commission's rules, the Commission has authority to waive its rules "for good cause shown."[15] 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.[16] In determining whether waiver is appropriate, the Commission should "take into

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12 The new extended Ku- and Ka-band frequencies are not currently licensed to, or approved for market access by, any other operator. *See* FCC, Approved Space Station List, https://www.fcc.gov/approved-space-station-list (last revised March 23, 2020).

13 Intelsat 40e is equipped with tunable TT&C by which center frequencies are selectable via ground command in 100 kHz steps. *See* Engineering Statement at § 2.3.

14 47 C.F.R. § 2.106, fn. NG52. Footnote NG52 was formerly footnote NG104.

15 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

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

account considerations of hardship, equity, or more effective implementation of overall policy."[17] Additionally, a waiver of the Table of Allocations is generally granted "when there is little potential interference into any service authorized under the Table of Frequency allocations and when the nonconforming operator accepts any interference from authorized services."[18]

Good cause exists to waive the international only requirements for the 10950-11200 MHz and 11450-11700 MHz frequency bands on Intelsat 40e. The purpose of NG52 is to limit the number of the FSS earth stations with which the co-primary fixed service ("FS") would need to coordinate.[19] The International Bureau has found that waiving NG52 would not undermine the purpose of the rules if the party seeking a waiver: (1) will be utilizing earth stations that are receive-only in these bands and thus "not capable of causing interference into FS stations" operating in the bands; and (2) agrees to "accept any level of interference from FS stations" in these bands.[20]

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17 *WAIT Radio*, 418 F.2d at 1159.

18 *See The Boeing Company*, Order and Authorization, 16 FCC Rcd 22645, 22651 (Int'l Bur. & OET 2001); *Application of Fugro-Chance, Inc. for Blanket Authority to Construct and Operate a Private Network of Receive-Only Mobile Earth Stations*, Order and Authorization, 10 FCC Rcd 2860 (Int'l Bur. 1995) (authorizing MSS in the C-band); *see also Application of Motorola Satellite Communications, Inc. for Modification of License*, Order and Authorization, 11 FCC Rcd 13952-13956 (Int'l Bur. 1996) (authorizing service to fixed terminals in bands allocated the mobile satellite service).

19 *See Satellite Services*, 26 RR 2d 1257, 1263-65. *See also EchoStar KuX Corporation Application for Authority to Construct, Launch and Operate a Geostationary Satellite Using the Extended Ku-band Frequencies in the Fixed-Satellite Service at the 83º W.L. Orbital Location*, Order and Authorization, DA 04-3162, 9 (Int'l Bur., Sept. 30, 2004) ("EchoStar 83º Waiver").

20 *Id.* at ¶ 13.

With respect to the 10950-11200 MHz and 11450-11700 MHz bands, grant of the requested waiver satisfies these criteria and would be consistent with precedent.[21] The earth stations operating in both these bands with Intelsat 40e will not transmit and Intelsat agrees to accept any level of interference into those earth stations from FS stations in the band. Intelsat will provide services in the 10950-11200 MHz and 11450-11700 MHz frequency bands only on a non-interference/non-protected basis. Accordingly, the earth stations operating in these bands pose no interference concerns with respect to co-frequency FS stations and therefore will not need to be coordinated with FS stations located within the United States and its territories.

Intelsat also agrees to abide by the customer notification requirements that the International Bureau has previously imposed when granting waivers of NG52.[22] Intelsat will inform its customers in writing, including any customers receiving end-user services from resellers accessing capacity on Intelsat 40e, of the potential for interference from FS operations in the 10950-11200 MHz and 11450-11700 MHz bands.

E. Milestone and Bond Requirements

Intelsat 40e will be subject to the milestone and bond posting requirements set forth in Sections 25.164 and 25.165 of the Commission's rules.[23]

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[21] *See, e.g., DIRECTV Enterprises, LLC, Fleet Management Notice for SKY-B1 Satellite*, File No. SAT-MOD-20170221-00019, Condition 10 (stamp grant, reissued May 11, 2017).

[22] *See, e.g., Intelsat North America Request for Waiver*, File No. SAT-MOD-20050610-00122, Condition 3 (stamp grant with conditions issued Sept. 30, 2005); EchoStar 83º Waiver at ¶ 13.

[23] 47 C.F.R. §§ 25.164 and 25.165.

II. GRANT OF THIS APPLICATION WILL SERVE THE PUBLIC INTEREST

The new, high-throughput, Intelsat 40e satellite will serve the public interest by ensuring that additional capacity is available to serve customers in North and Central America. The additional capacity will benefit customers by enabling Intelsat to expand its service offerings, as well as provide back-up capacity to customers served by Galaxy 17. Additionally, as noted above, Intelsat 40e will host NASA's TEMPO instrument, which "will make hourly measurements of atmospheric gases...across North America and provide air quality products that will be made publicly available and help improve air quality forecasting."[24] For these reasons, grant of this Application is therefore in the public interest.

III. USE OF THE 10950-11200 MHz, 11450-11700 MHz, 18300-18800 MHZ, 19700-20200 MHZ, AND 27500-28600 MHZ FREQUENCY BANDS

Intelsat understands that operations in the 10950-11200 MHz, 11450-11700 MHz, 18300-18800 MHz, 19700-20200 MHz, and 27500-28600 MHz frequency bands are subject to certain limitations and obligations, which Intelsat accepts and will fulfill.[25] Specifically, for operations in the 10950-11200 MHz frequency band, Intelsat accepts the following conditions:

- Operations in the 10950-11200 MHz frequency band shall comply with the terms of 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.

- Operations in the 10950-11200 MHz frequency band are limited to international operations in accordance with footnote NG52 to the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, NG52.

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[24] *See supra* n. **Error! Bookmark not defined.**.

[25] Intelsat is also aware that frequencies in the 28600-29100 MHz band are secondary for GSO FSS operations. 47 C.F.R. § 2.106, fn. NG165.

For operations in the 11450-11700 MHz frequency band, Intelsat accepts the following conditions:

- Intelsat's use of the 11450-11700 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.

- Operations in the 11450-11700 MHz frequency band are limited to international operations in accordance with footnote NG52 to the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, NG52.

For operations in the 18300-19300 MHz and 19700-20200 MHz bands, Intelsat accepts the following conditions:

- Operators must coordinate their space-to-Earth operations in the 18300-19300 MHz and 19700-20200 MHz frequency bands with the U.S. Federal systems, including Federal operations to earth stations in foreign countries, in accordance with footnote US334 to the United States Table of Frequency Allocations, 47 CFR § 2.106.

- The power flux-density ("pfd") at the Earth's surface produced by the emissions from the Intelsat 40e space station for all atmospheric conditions, and for all methods of modulation in the 18300-19300 MHz and 19700-20200 MHz frequency bands (space-to-Earth), must not exceed a level of -118 dBW/m2/MHz at any angle of arrival.

For operations in the 27500-28600 MHz band, Intelsat accepts the following conditions:

- Communications between U.S.-licensed earth stations and Intelsat 40e in the 28100-28350 MHZ (Earth-to-space) frequency band are on a secondary basis with respect to Upper Microwave Flexible Use Service ("UMFUS") operations, except for FSS operations associated with earth stations authorized pursuant to 47 CFR § 25.136.

IV. CONCLUSION

Based on the foregoing, Intelsat respectfully requests that the Commission grant this Application and the related waiver.

Respectfully submitted,

Intelsat License LLC

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April 13, 2020

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 *2018 Pro Forma*.

[1] *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 22151 (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) ("*2018 Pro Forma*").

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:	Board of Managers:
David Tolley, Chairman	David Tolley
José Toscano, Deputy Chairman	José Toscano
Michelle Bryan, Secretary	Michelle Bryan
Mirjana Hervy, Director, Finance	

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 indirectly wholly owned by Intelsat S.A. Specifically, Intelsat License LLC 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 managed by one general partner and two limited partners—Intelsat Genesis GP LLC, Intelsat Genesis Inc, and Intelsat Jackson Holdings S.A., respectively. Intelsat Genesis GP LLC is a Delaware limited liability company, which is a wholly owned subsidiary of Intelsat Genesis Inc., a Delaware corporation. Intelsat Genesis Inc. is a wholly owned subsidiary of 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 Luxemburg 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. is a publicly traded company. To the best of Intelsat's knowledge, and with the exception of BC Partners Holdings Limited ("BCP"), described below, no person or entity holds a ten percent or greater ownership interest in Intelsat S.A. as of March 1, 2020.

Name: BCP
Address: Heritage Hall, Le Marchant Street, St Peter Port, Guernsey, Channel Islands
Citizenship: Guernsey
Indirect Interest: Approximately 34%[1]

[1] The exact indirect interest held by BCP is subject to fluctuation as Intelsat S.A.'s stock is publicly traded.