Before the **Federal Communications Commission** Washington, DC 20554

In the Matter of)Í

Horizons-3 License LLC

Application for Authority to Launch and Operate Horizons 3e, a Replacement Satellite with New Frequencies, at 169.0° E.L.

File No.	SAT-LOA-	

APPLICATION FOR AUTHORITY TO LAUNCH AND OPERATE HORIZONS 3e AT 169.0° E.L.

Horizons-3 License LLC, an indirect wholly owned subsidiary of Intelsat S.A. (together "Intelsat"), pursuant to Section 25.114 of the Federal Communications Commission's ("FCC" or "Commission") rules, hereby applies to launch and operate a C/Ku-band satellite, to be known as Horizons 3e, at the 169.0° E.L. orbital location. Horizons 3e is scheduled for launch in Q3 2018 and will replace Intelsat 805 (call sign S2404), which will at that time be operating at 169.0° E.L., and Intelsat 8 (call sign S2460), which currently operates at 169.0° E.L. Horizons 3e will operate on a non-common carrier basis.

Intelsat 805 is expected to begin relocating to 169.0° E.L. beginning no earlier than December 1, 2015. *See* Request for 180-Day STA to Drift and Operate Intelsat 805 at 169.0 E.L., Call Sign S2404, File No. SAT-STA-20151002-00068 (stamp grant, Nov. 25, 2015). Intelsat has a pending application to modify the Intelsat 805 license to reflect the relocation. *See Intelsat License LLC Application to Modify Authorization for Intelsat 805*, File No. SAT-MOD-20151020-00072 (filed Oct. 20, 2015).

¹ 47 C.F.R. § 25.114.

² Intelest 205 is expect

As demonstrated below, Intelsat is legally and technically qualified to launch and operate its proposed replacement satellite. Moreover, grant of this application will serve the public interest by ensuring service continuity and adding new capacity at the nominal 169° E.L. 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. <u>INTELSAT IS QUALIFIED TO HOLD THE REPLACEMENT</u> AUTHORIZATION REQUESTED HEREIN

A. Legal Qualifications

Intelsat is legally qualified to hold the replacement 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

See Policy Branch Information; Actions Taken, Report No. SAT-00987, File No. SAT-MOD-20130830-00110 (Dec. 20, 2013) (Public Notice). Intelsat has sought authority to relocate Intelsat 8 to 168.9° E.L. commencing April 1, 2016. See Intelsat License LLC Application to Modify Authorization for Intelsat 8, File No. SAT-MOD-20151021-00073 (filed Oct. 21, 2015).

Section 310(b) is not applicable to this license because Horizons 3e, 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 (Int'l Bur. 2004).

⁵ 47 C.F.R. § 25.114(c).

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, FCC 06-85 ¶ 23 (rel. June 19, 2006) ("The Commission previously has determined that PanAmSat and Intelsat are qualified to hold licenses.").

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 on Intelsat's compliance with the Commission's orbital debris mitigation rules.⁷

C. Waiver Requests

Intelsat requests waiver of the following technical rules: (i) Section 25.210(i)(l), which requires that satellites be designed to provide a cross-polarization isolation such that the ratio of the on-axis co-polar gain to the on-axis cross-polar gain of the antenna in the assigned frequency band will be at least 30 dB within its primary coverage area;⁸ (ii) Section 25.210(a)(3), which requires that space stations in the fixed-satellite service ("FSS") used for domestic service in the 3700-4200 MHz and 5925-6425 MHz frequency bands be capable of switching polarization sense upon ground command;⁹ and (iii) Section 2.106¹⁰ to enable Horizons 3e to use the 12200-12750 MHz band to provide fixed satellite services.

Under Section 1.3 of the Commission's rules, the Commission has authority to waive its rules "for good cause shown." 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

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

⁸ 47 C.F.R. § 25.210 (i)(l).

⁹ *Id.* § 25.210(a)(3).

¹⁰ *Id.* § 2.106.

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

the general rule.¹² In determining whether a waiver is appropriate, the Commission should "take into account considerations of hardship, equity, or more effective implementation of overall policy."¹³ As shown below, there is good cause for each of the requested technical waivers.

i. Request for Waiver of Section 25.210(i)(1)

To the extent necessary, Intelsat requests a waiver of Section 25.210(i)(1) of the Commission's rules, which requires that satellites be designed to provide a cross-polarization isolation such that the ratio of the on-axis co-polar gain to the on-axis cross-polar gain of the antenna in the assigned frequency band will be at least 30 dB within its primary coverage area.

Good cause exists to waive the cross-polarization isolation requirement of Section 25.210(i)(1) because a failure to meet the requirement does not adversely affect any other operator. The FCC previously has acknowledged that non-compliance results only in self-interference and granted waivers in similar situations. Moreover, the Commission has recently proposed to eliminate this requirement entirely. In this case, the level of isolation of the non-compliant Horizons 3e beams is equal to or greater than 22 dB. This level was the best that the satellite manufacturer could achieve without causing excessive degradation in the performance

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

¹³ *WAIT Radio*, 418 F.2d at 1159.

See AMC-15 Ku-Band Circular Polarization Amendment, File No. SAT-AMD-20030422-00069, Attachment Terms and Conditions of Authorization ¶ 5 (Aug. 18, 2004).

See, e.g., Applications of INTELSAT LLC; For Authority to Operator, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit, 15 FCC Rcd 15460, 15503 ¶ 109 (2000); New Skies Satellites N.V.; Petition for Declaratory Ruling, Order, 17 FCC Rcd 10369, 10376-377 ¶ 19 (2002); Star One S.A. Petition for Declaratory Ruling to Add the Star One C1 Satellite at 65° W.L. to the Permitted Space Station List, Order, 19 FCC Rcd 16334, 16339 ¶ 12 (2004).

Comprehensive Review of Licensing and Operating Rules for Satellite Services, Further Notice of Proposed Rulemaking, IB Docket No. 12-267, FCC 14-142 ¶ 181 (rel. Sept. 30, 2014).

of the beam and/or in the size of the beams' coverage area. Intelsat has taken this level of isolation into account in its planned operations. Finally, Commission precedent supports a grant of Intelsat's requested waiver of Section 25.210(i)(1) for Horizons 3e.¹⁷

ii. Request for Waiver of Section 25.210(a)(3)

Horizons 3e does not have the capability to switch the polarization sense of the C-band communication beams upon ground command and, hence, is not compliant with the provisions of Section 25.210(a)(3) of the Commission's rules. To the extent necessary, Intelsat requests a waiver of Section 25.210(a)(3), which requires that space stations in the FSS used for domestic service in the 3700-4200 MHz and 5925-6425 MHz frequency bands be capable of switching polarization sense upon ground command.

Good cause exists to waive Section 25.210(a)(3) because waiver will not undermine the rule's policy objective to mitigate potential interference between adjacent fixed- satellite systems transmitting analog television signals.¹⁸ Further, failure to meet the requirements of Section 25.210(a)(3) does not adversely affect any other operator. Both polarization senses will be used in each sub-band in both the uplink and downlink, and so the interference potential with respect to adjacent operators is not affected by the polarization plan.

iii. Request for Waivers of Section 2.106

Intelsat requests waiver of Section 2.106 of the Commission's rules to allow Intelsat to provide FSS in the 12200-12750 MHz band. In the U.S. Table of Frequency Allocations, the 12200-12700 MHz band is allocated to fixed service ("FS") and broadcasting-satellite service

See Application to Launch and Operate Intelsat 17, a Replacement Satellite, at 66.0 E.L., IBFS File No. SAT-LOA-20100726-00167 (stamp grant Nov. 17, 2010; re-issued stamp grant with further conditions Dec. 17, 2010).

See Telesat Canada Petition for Declaratory Ruling for Inclusion of ANIK F3 on the Permitted Space Station List, Order, 22 FCC Rcd 588 ¶ 10 (2007).

("BSS") and the 12700–12750 MHz frequency band is allocated for use by the FS, Mobile Service ("MS") and FSS (Earth-to-space). Horizons 3e will operate in these frequencies in the space-to-Earth direction, which is in accordance with the Region 3 allocation. ²⁰

The FCC has previously granted a waiver to Intelsat 8 to provide service in the 12250-12750 MHz bands at the 169.0° E.L. orbital location. Just as the Commission recognized with respect to Intelsat 8, Horizons 3e is unlikely to cause harmful interference to existing or future users operating in accordance with the Table of Frequency Allocations in International Telecommunications Union ("ITU") Region 2 and the Commission's rules. First, the operations of Horizons 3e will not cause harmful interference in the 12200-12700 MHz band. Operating at 169.0° E.L., Horizons 3e will operate at least 15.8° away from—and with no risk of providing harmful interference to—the nearest BSS network that could service any portion of ITU Region 2 pursuant to the ITU Region 2 BSS Plan. Terrestrial systems operating within the United States will not be subjected to harmful interference because Horizon 3e's transmissions in

¹⁹ 47 C.F.R. § 2.106.

To the extent necessary, Intelsat seeks waiver of Section 25.202(a)(1) of the FCC's rules, which allocates the 12700-12750 MHz band for Earth-to-space transmissions. *See* 47 C.F.R. § 25.202(a)(1).

See Policy Branch Information; Actions Taken, Report No. SAT-00987, File No. SAT-MOD-20130830-00110 (Dec. 20, 2013) (Public Notice).

See Intelsat License LLC, Application to Modify Authorization for Intelsat 8 (S2460), File Nos. SAT-MOD-20120619-00100 & SAT-AMD-20120815-00131, 2-3 (stamp grant Aug. 9, 2013).

Under the ITU Region 2 BSS Plan, no BSS system may occupy a nominal orbital position further west than 175.2° W.L. in the 12200-12700 MHz band or further east than 54° W.L. in the 12500-12700 MHz band or 44° W.L. in the 12200-12500 MHz band. International Telecommunication Union, Radio Regulations, Appendix 30, Annex 7 (2012).

the band will comply with ITU power flux-density ("PFD") limits.²⁴

Second, Horizon 3e's operations in the 12700-12750 MHz band will not cause harmful interference. Intelsat will protect terrestrial stations by complying with ITU PFD limits.

Additionally, Intelsat will operate in these frequencies in Region 2 on a non-protected basis and will therefore not claim protection from interference caused by an FSS earth station operating in that region.

Good cause therefore exists to waive Sections 2.106 and 25.202(a)(1) with respect to Horizons 3e's operations in the 12200-12750 MHz band because waiver will not result in harmful interference to or otherwise adversely affect any other operator. Moreover, waiver will enable Horizons 3e to maintain continuity of service for existing customers when Intelsat 8 is deorbited. The requested waiver is in the public interest because it allows Intelsat to continue providing a high level of service without causing harmful interference.

II. OPERATIONAL FREQUENCIES

The following chart shows the frequencies that will be used by the Horizons 3e satellite, as well as the frequencies that currently are used – or will be used following completion of Intelsat 805's planned drift – by the Intelsat 8 and Intelsat 805 satellites at the nominal 169° E.L orbital location.

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See Engineering Statement at 4.

	Intelsat 8	Intelsat 805	Horizon 3e
3400-3700 MHz		✓	
3700-4200 MHz	✓	✓	✓
5850-5925 MHz		✓	
5925-6425 MHz	✓	✓	✓
6425-6650 MHz		✓	
10850-11700 MHz			✓
12200-12250 MHz			✓
12250-12500 MHz	✓		✓
12500-12750 MHz	✓	✓	✓
12920-13250 MHz			✓
13750-13997 MHz			✓
13997-14000 MHz	✓25		✓
14000-14250 MHz	✓	✓	✓
14250-14500 MHz	✓		✓

Horizons 3e contains new frequencies at 10850-11700 MHz, 12200-12250 MHz, 12920-13250 MHz, and 13750-13997 MHz that are not currently on either the Intelsat 8 or Intelsat 805 satellite. The frequency bands 11200-11700 MHz and 12920-13250 MHz on Horizons 3e currently are available for licensing under the Commission's first-come, first-served procedures.²⁶

III. MILESTONE AND BOND REQUIREMENTS

Horizons 3e will be subject to the milestone and bond posting requirements set forth in Sections 25.164 and 25.165 of the Commission's rules because the 10850-11700 MHz, 12200-

Included for the purpose of authorizing Intelsat 8's use of the 13998.0 MHz command link.

See Policy Branch Information, Actions Taken, Report No. SAT-00966, Informative (Aug. 9, 2013) (Public Notice).

12250 MHz, 12920-13250 MHz, and 13750-13997 MHz are included on Horizons 3e, but are not on Intelsat 8 or Intelsat 805.²⁷

IV. GRANT OF THIS APPLICATION WILL SERVE THE PUBLIC INTEREST

Grant of this application will serve the public interest by ensuring continuity of service and providing additional capacity in the United States and Asia Pacific region from the nominal 169° E.L. orbital location.

V. <u>ITU COST RECOVERY</u>

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. 28

Intelsat is aware of and 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. Intelsat will submit a declaration as required by Section 25.111(d) of the Commission's rules. 29

VI. USE OF 10850-11700 MHZ AND 13750-14000 MHZ FREQUENCY BANDS

Intelsat understands that operations in the 11450-11700 MHz and 13750-14000 MHz frequency bands are subject to certain limitations and obligations, which Intelsat accepts and will fulfill. For operations in the 11450-11700 MHz frequency band, Intelsat accepts the following condition:

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²⁷ 47 C.F.R. §§ 25.164, 25.165.

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

²⁹ 47 C.F.R. § 25.111(d).

• Intelsat's use of the 10850-11700 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.

For operations in the 13750-14000 MHz 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 Horizons 3e space station in the 13750-13800 MHz band (Earth-to-space) is required to coordinate through National Telecommunications and Information Administration's (NTIA's) Interdepartment Radio Advisory Committee's (IRAC's) Frequency Assignment Subcommittee (FAS) to minimize interference to the National Aeronautics and Space Administration Tracking and Data Relay Satellite System, including manned space flight.
- Operations of any earth station in the United States and its possessions communicating with the Horizons 3e space station in the 13750-14000 MHz band (Earth-to-space) shall comply with footnote US356 to 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 Horizons 3e space station in the 13750-14000 MHz band (Earth-to-space) shall be consistent with footnote 5.502 to the 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 Horizons 3e space station in the 13750-14000 MHz band are encouraged to cooperate voluntarily with the National Aeronautics and Space Administration (NASA) in order to facilitate continued operation of NASA's Tropical Rainfall Measuring Mission (TRMM) satellite.

VII. <u>CONCLUSION</u>

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

Respectfully submitted,

/s/ Susan H. Crandall

Susan H. Crandall Associate General Counsel Intelsat Corporation

Jennifer D. Hindin Colleen King WILEY REIN LLP 1776 K Street, N.W. Washington, DC 20006

December 2, 2015

Exhibit A FCC Form 312, Response to Question 34: Foreign Ownership

Horizons-3 License LLC is indirectly wholly owned by Intelsat S.A. The Commission previously approved foreign ownership in Intelsat S.A., in the *Intelsat-Serafina Order*. In December 2009 and October 2011, the Commission also approved *pro forma* changes in Intelsat S.A.'s foreign ownership. There have been no other material changes to Intelsat S.A.'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-20110812-00963 (granted Oct. 13, 2011), and 0004825139 (granted Oct. 19, 2011).

Exhibit B FCC Form 312, Response to Question 36: Cancelled Authorizations

Horizons-3 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"), based on the Bureau's finding that PanAmSat had not satisfied applicable construction milestones. 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.

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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 Horizons-3 License LLC are as follows:

Officers:

Kurt Riegelman, Chairman, President and Chief Operating Officer Stephen Chernow, Vice President and General Counsel Michael Green, Vice President and Controller Henry Heuer, Vice President, Treasury and Tax, and Treasurer Sajid Ajmeri, Vice President and Secretary.

Board of Managers:

Kurt Riegelman Stephen Chernow Michael Green

The business address of all Horizons-3 License LLC officers and members of the Board of Managers is: 7900 Tysons One Place, McLean, VA 22102.

Horizons-3 License LLC is a Delaware limited liability company that is wholly owned by Intelsat Horizons-3 Corporation, a Delaware corporation. Intelsat Horizons-3 Corporation is wholly owned by Intelsat Corporation, a Delaware corporation. Intelsat Corporation 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 the Delaware entities may be contacted at the following address: 7900 Tysons One Place, McLean, VA 22102. Each of the Luxembourg 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 fully consummated.