TECHNICAL APPENDIX

Application for Authority to Launch and Operate SES-32 at 123.0° W.L.

1 Introduction

This technical appendix is submitted in support of the application of Intelsat License LLC ("Intelsat") for authority to launch and operate a C- and Ku-band satellite, to be known as SES-32, at 123.0° W.L. Together with the accompanying Schedule S and GXT files, Intelsat herein provides supporting information relating to this application, such as the characteristics of SES-32 and compliance with the various provisions of Part 25 of the Federal Communications Commission's ("FCC" or "Commission") rules.[1]

SES-32 is capable of operating in the following C- and Ku-band frequencies:

Direction	Frequency Range
Uplink	5885-5925 MHz
	5925-6425 MHz
	14000-14500 MHz
Downlink	4160-4200 MHz
	11700-12200 MHz

The transponders in the 11700-12200 MHz downlink can be connected to either 5885-6385 MHz or the 14000-14500 MHz uplink frequencies, switchable on a transponder-by-transponder basis. Intelsat expects most of these transponders to be configured with C-band uplink cross-strapped with Ku-band downlink in order to maintain substantially the same service to Upper C-band customers migrating into the Ku-band. In addition, there will be two C-band-only transponders occupying the 4160-4200 MHz downlink range connected to corresponding standard C-band uplink frequencies 6385-6425 MHz.

The C- and Ku-band frequencies, polarization, and channel plan as well as the coverage contours and performance characteristics are provided in Schedule S. SES-32's C- and Ku-band coverage area is United States and nearby territories, as shown in the GXT files.

2 Telemetry, Telecommand, and Control ("TT&C") Facilities

The TT&C beams TLML, TLMR, CMDL, and CMDR have gain contours that vary by less than 8 dB across the surface of the Earth, and accordingly the gain at 8 dB below the peak falls beyond the edge of

[1] Unless otherwise stated, all references to rule sections in this document refer to sections in Title 47 of the Code of Federal Regulations.

the Earth. Therefore, pursuant to Section 25.114(c)(4)(vi)(A) of the Commission's rules, contours for these beams are not required to be provided, and the associated GXT files have not been included in Schedule S.

SES-32's TT&C frequencies will be tunable in 100 kHz steps across the entire 14000-14500 MHz and 11700-12200 MHz frequencies, and Intelsat is seeking authority to flexibly operate on any of those frequencies, consistent with the requirements in 47 C.F.R. § 25.202(g). The TT&C carrier center frequencies and bandwidths for nominal operations are provided in Schedule S.

3 Coordination Statement and Certifications

Intelsat certifies that the SES-32 downlink EIRP densities will not exceed 3 dBW/4 kHz in the conventional C-band and 14 dBW/4 kHz in conventional Ku-band, unless higher levels are coordinated with the operators of authorized co-frequency space stations at assigned locations within six degrees of 123.0° W.L.

Furthermore, Intelsat certifies that the levels of the associated uplink emissions in the C- and Ku-bands will not exceed the limits set in Section 25.218 unless appropriately coordinated with operators of authorized co-frequency space stations at assigned locations within six degrees of 123.0° W.L.

4 Emission Compliance

Section 25.202(e) of the Commission's rules requires that the carrier frequency of each space station transmitter be maintained within 0.002% of the reference frequency. SES-32 is designed to be compliant with the provisions of this rule.

SES-32 will comply with the provisions of Section 25.202(f) with regard to its emissions.

5 International Telecommunication Union ("ITU") Filings

SES-32 operations will use existing ITU filings. As needed, Intelsat will submit to the Commission additional ITU filing to cover any frequency bands or parameters not covered by the existing filings. Intelsat unconditionally accepts all the consequent ITU cost-recovery responsibility for ITU filings submitted by the Commission on behalf of Intelsat.[2]

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[2] *See* Legal Narrative at § 9.

6 Orbital Debris Mitigation Plan

Intelsat will work with the manufacturer of SES-32 to prioritize orbital debris assessment and mitigation in system design and operations. Intelsat will implement the latest technology to reduce the likelihood of collision, casualty, and explosion at any mission stage. Testing will include a reliability analysis for the TT&C, propulsion, and energy systems, among other features, supporting orbital debris mitigation and successful disposal.

Intelsat is proactive in ensuring the safe operation and disposal of all spacecraft under its control.

Design of the SES-32 satellite has not yet been finalized. Intelsat will supplement this application to provide information required in Sections 25.114(d)(14)(ii) and 25.114(d)(14)(vii)(1) once the necessary information is available to calculate the probability that SES-32 will become a source of debris by collision with small debris or meteoroids that would cause loss of control and prevent disposal and the altitude selected for a disposal orbit and the calculations that are used in deriving the disposal altitude.[3]

6.1 Spacecraft Hardware Design

SES-32 will be designed to avoid the creation of debris during deployment and normal operation. The satellite design will protect against micrometeoroid flux and impact probability consistent with the National Aeronautics and Space Administration guidelines and standards.

Intelsat will assess and limit the amount of debris released in a planned manner during normal operations. While the satellite design has not been finalized, Intelsat expects that no mission-related debris will be generated during launch, spacecraft separation, or routine on-orbit operations based on the design approach used for recent Intelsat satellite missions.

Intelsat also will assess and limit the probability of the spacecraft becoming a source of debris by collisions with small debris or meteoroids that could cause loss of control and prevent post-mission disposal.

Intelsat requires that spacecraft manufacturers assess the probability of micrometeorite damage that can cause any loss of functionality. This probability is then factored into the ultimate spacecraft probability of success.

Any material risk identified through this assessment will be mitigated to ensure that the spacecraft meets Intelsat's mission reliability and probability-of-success requirements.

6.2 Minimizing Accidental Explosions

Intelsat will assess and limit the probability of accidental explosions and release of liquids that will remain in droplet form during and after the completion of mission operations. Propellant tanks and

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[3] *Id.* § III(C).

thrusters will be designed consistent with standard industry practices. The spacecraft will be designed such that all energy sources, including chemical, pressure, and kinetic energy, can be removed at the end of life by depleting residual fuel, leaving all fuel line valves open, and venting all pressurized systems. At the completion of the mission and upon disposal of the satellite, Intelsat will ensure that active units are turned off. Upon disposal Intelsat will vent the fuel and propellant tanks. Additionally, all batteries will be left in a permanently discharge state.

6.3 Safe Flight Profiles

Intelsat has assessed and limited the probability of the spacecraft becoming a source of debris by collisions with large debris or other operational spacecraft.

SES-32 will be positioned at 123.0° W.L., where it will be collocated with Galaxy 18, which is currently at 123.0° W.L. Intelsat will develop a colocation strategy to allow SES-32 and Galaxy 18 to operate safely.

During collocation, Intelsat will likely use the proven inclination-eccentricity technique to ensure adequate separation between the satellites within a shared station-keeping volume. This strategy is presently in use by Intelsat at several orbital locations to ensure proper operation and safety of multiple satellites within one orbital box.

Additionally, SES-32 will be trackable. During its operational mission, Intelsat will monitor the Space Surveillance Network (SSN) debris tracking and will perform collision avoidance maneuvers when necessary. Intelsat uses the Space Safety Portal ("SSP") system from the Space Data Association to monitor the risk of close approach of its satellites with other objects. Any close encounters (separation of less than 10 km) are flagged and investigated in more detail. If required, avoidance maneuvers are performed to eliminate the possibility of collisions. During any relocation, the moving spacecraft is maneuvered such that it is at least 30 km away from the synchronous radius at all times. In most cases, much larger deviation from the synchronous radius is used. In addition, the SSP system is used to ensure no close encounter occurs during the move. When de-orbit of a spacecraft is required, the initial phase is treated as a satellite move, and the same precautions are used to ensure collision avoidance. Following decommissioning in its graveyard orbit, no further operations will be performed on the inert spacecraft.

6.4 Post Mission Disposal

At the end of each satellite's life, Intelsat plans to maneuver SES-32 to a disposal orbit with a minimum perigee above the normal operational altitude. The proposed disposal orbit altitude will comply with the altitude resulting from application of the IADC formula based on the following calculation:

$36{,}021 \text{ km} + (1000 \times CR \times A/m)$

Where A is the average aspect area of the satellite, m is the dry mass of the satellite and Cr is the solar radiation pressure coefficient.

Intelsat will follow industry standards in determining the sufficient amount of fuel to reserve for the post-mission disposal maneuvers the spacecraft. Intelsat will assess fuel-gauging uncertainty and provide an adequate margin of fuel reserve to address the assessed uncertainty.

Certification Statement

I hereby certify that I am a technically qualified person and am familiar with Part 25 of the Commission's rules. The contents of this engineering statement were prepared by me or under my direct supervision and to the best of my knowledge are complete and accurate.

/s/ Giselle Creeser	July 22, 2026
Giselle Creeser Director, Spectrum Strategy & Development – Americas SES Americom, Inc.	Date