

Engineering Statement

1 Introduction

Intelsat License LLC (“Intelsat”) seeks authority in this application to redeploy E50WA to operate at 50.3°W.L. (309. 7°E.L.) and maintain an east-west station-keeping tolerance of ± 0.1 degrees.

Together with the accompanying Schedule S and .gxt files, Intelsat herein provides supporting information relating to this modification and compliance with the various provisions of Part 25 of the Federal Communication Commission’s (“FCC or “Commission”) rules.¹

Spacecraft Overview

E50WA is capable of operating in Ku-band frequencies:

Direction	Frequency
Uplink	12900-13250 MHz ²
	13750-14000 MHz
	14000-14500 MHz
	17300-18100 MHz ³
	18100-18400 MHz ⁴
Downlink	10700-10950 MHz
	10950-11200 MHz
	11200-11450 MHz
	11450-11700 MHz
	11700-12200 MHz
	12200-12500 MHz
	12500-12750 MHz ⁵

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

² Intelsat is not seeking authority to operate in 12900-13250 MHz.

³ Intelsat is not seeking authority to operate in 17800-18100 MHz.

⁴ Intelsat is not seeking authority to operate in 18100-18400 MHz.

⁵ Intelsat is not seeking authority to operate in 12500-12750 MHz.

The coverage area is provided in Schedule S and the .gxt files.

1.1 Spacecraft Characteristics

E50WA is an Airbus Defence and Space Eurostar-3000 model spacecraft three-axis stabilized spacecraft with a rectangular outer-body structure. E50WA utilizes two deployable solar array wings, one fixed and two mechanically adjustable reflectors to operate in Ku-bands.

The E50WA spacecraft is composed of the following subsystems:

- Thermal;
- Power;
- Attitude Control;
- Propulsion;
- Telemetry, Tracking, and Command (“TT&C”);
- Uplink Power Control (“ULPC”); and
- Communications.

These subsystems maintain the correct position and attitude of the spacecraft; ensure that all internal units are maintained within the required temperature range; and ensure that the spacecraft can be commanded and controlled with a high level of reliability from launch to the end of its useful life. The spacecraft design incorporates redundancy in all subsystems in order to avoid single-point failures.

The structural design of E50WA provides mechanical support for all subsystems. The structure supports the communication antennas, solar arrays, and thrusters. It also provides a stable platform for preserving the alignment of critical elements of the spacecraft.

1.2 Communication Subsystem

The characteristics of the satellite’s Ku-band communication subsystems are provided in Schedule S. The Schedule S beam designations are provided in Exhibit 1.

1.3 TT&C Subsystem

The TT&C subsystem provides the following functions:

- Acquisition, processing and transmission of spacecraft telemetry data
- Reception and retransmission of ground station generated ranging signals
- Reception, processing and distribution of telecommands

The characteristics of the satellite’s command and telemetry are provided in Schedule S. The coverage patterns of the command and telemetry beams 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 the Earth. Therefore, pursuant to Section 25.114(c)(4)(vi)(A), contours for these beams are not required to be provided and the associated GXT files have not been included in Schedule S.

1.4 ULPC

E50WA utilizes Ku-band channels for ULPC, antenna tracking, and ranging. The ULPC beacon characteristics are provided in Schedule S. The coverage patterns of the ULPC beams 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 the Earth. Therefore, pursuant to Section 25.114(c)(4)(vi)(A), contours for these beams are not required to be provided and the associated .gxt files have not been included in Schedule S.

1.5 Satellite Station-Keeping

The satellite will be maintained within 0.1° of its nominal longitudinal position in the east-west direction.

2 Services

E50WA is a general-purpose communications satellite and has been designed to support various services offered within the Intelsat satellite system. Depending upon customer needs, the transponders on E50WA can provide a range of communications services, including compressed digital video, high speed digital data, and digital single carrier per channel data channels.

3 Power Flux Density

The power flux density limits for space stations operating in the Ku-bands are specified in Section 25.208. As provided in Schedule S, the E50WA transmissions do not exceed these limits.

4 Orbital Location

Intelsat requests that E50WA be assigned the 50.3 W.L. (309.7° E.L.) orbital location. The 50.3°W.L. orbital location satisfies E50WA requirements for optimizing coverage, elevation angles, and service availability.

5 International Telecommunication Union Filing

E50WA operations in the frequency bands provided in the table below will rely on the notified and coordinated filings under the Administrations of the United States, and Papua New Guinea Administration.

Direction	Frequency	PNG Filing	USA filing
Uplink	12900-13250 MHz	NEW DAWN FSS-1-1	USASAT-101B
	13750-14000 MHz	NEW DAWN 35-1	USASAT-80A
	14000-14500 MHz	NEW DAWN 35-1	INTELSAT7 310E INTELSAT9 310E INTELSAT10 310E USASAT-80A
	17300-17800 MHz	N/A	USABSS-39
	17800-18100 MHz	N/A	N/A
	18100-18400 MHz	NEW DAWN 35-1 (R1)	N/A
Downlink	10700-10950 MHz	NEW DAWN FSS-1-1	USASAT-101B
	10950-11200 MHz	NEW DAWN 35-1	INTELSAT7 310E INTELSAT9 310E INTELSAT10 310E USASAT-80A
	11200-11450 MHz	NEW DAWN FSS-1-1	USASAT-101B
	11450-11700 MHz	NEW DAWN 35-1	INTELSAT7 310E INTELSAT9 310E INTELSAT10 310E USASAT-80A USABSS-44
	11700-11950 MHz	NEW DAWN 35-1 (R2)	INTELSAT7 310E (R2) INTELSAT10 310E (R2) USASAT-80A (R2) USABSS-44 (R1)
	11950-12200 MHz	NEW DAWN 35-1 (R2)	USASAT-80A (R2)
	12200-12500 MHz		USABSS-39
	12500-12700 MHz	NEW DAWN 35-1 (R1)	USABSS-39 (R2)
	12700-12750 MHz	NEW DAWN 35-1 (R1)	N/A

6 Coordination Statement and Certifications

The downlink EIRP density of E50WA transmissions in the C-, and Ku-band will not exceed the levels specified in Section 25.140 and the associated uplink transmissions will not exceed applicable EIRP density envelopes in Section 25.218 unless the non-routine uplink and/or downlink operation is coordinated with operators of authorized co-frequency space stations at assigned locations within six degrees of E50WA.

7 Orbital Debris Mitigation Plan

Intelsat is proactive in ensuring safe operation and disposal of this and all spacecraft under its control. The four elements of debris mitigation are addressed below.

7.1 Spacecraft Hardware Design

E50WA is designed such that no debris will be released during normal operations. In order to limit the effects of such unlikely collisions critical satellite components are located inside the protective body of the satellite and are properly shielded. The spacecraft does not use any subsystems for end-of-life disposal that are not used for normal operations.

7.2 Minimizing Accidental Explosions

The spacecraft is designed in a manner to minimize the potential for such explosions. Propellant tanks and thrusters are isolated using redundant valves and electrical power systems are shielded in accordance with standard industry practices.

As part of the acceptance of the spacecraft, the manufacturer provided a reliability analysis using Failure Modes, Effects, and Criticality Analyses (FMECA) techniques. This analysis includes the failure modes from environmental damage such as debris and micrometeorite impacts. The numerical results presented for the bus subsystems, the payloads and the overall spacecraft showed the probability of mission success meet all industry standard contract specifications.

In the event Intelsat is the licensee at the completion of the satellite's mission, upon disposal of the satellite, Intelsat will ensure that active units are turned off and will vent the fuel and propellant tanks.⁶ Additionally, all batteries will be left in a permanently discharge state.

7.3 Safe Flight Profiles

Intelsat assesses the probability of collision with meteoroids and other debris. During its operational mission, Intelsat monitors the Space Surveillance Network (SSN) debris tracking and will perform collision avoidance maneuvers when necessary. Following decommissioning in its graveyard orbit, no further operations will be performed on the inert spacecraft.

⁶ To the extent possible. *See* Legal Narrative at Section III(C).

Intelsat is not aware of any other FCC-licensed system, or any other system applied for and under consideration by the FCC, that will have an overlapping station-keeping volume with E50WA at 50.3° W.L.

7.4 Post Mission Disposal

In the event Intelsat is the licensee at the completion of the satellite's mission, Intelsat will dispose of the spacecraft by moving it to an altitude of at least 269 kilometers above the geostationary arc. 11.3 kilograms of fuel has been reserved for this purpose.⁷

The effective area to mass ratio ($Cr \cdot A/M$) of the E50WA satellite is 0.0334 m²/kg, resulting in a minimum perigee disposal altitude under the Inter-Agency Space Debris Coordination Committee formula of 269 kilometers above the geostationary arc.⁸ Accordingly, the satellite's planned disposal orbit complies with the FCC's rules.

8 TT&C Control Earth Stations

TT&C operations will be conducted through earth stations in Rambouillet, France, and Caniçal, Madeira Island, Portugal.

Additionally, Intelsat is capable of remotely controlling E50WA from its facilities in McLean, Virginia; and Betzdorf, Luxembourg.

9 Miscellaneous

The spacecraft has the capability to bias the platform by +/- 0.5 degrees in the east/west direction and +/- 4 degrees in the north/south direction.

⁷ The reserved propellant figure is an estimate. This figure is 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.

⁸ In calculating the disposal orbit, Intelsat has used simplifying assumptions as permitted under the Commission's 2004 Orbital Debris Report and Order.⁸

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

January 30, 2026

Date

SES Americom
Director, Spectrum Engineering
on behalf of Intelsat License LLC

EXHIBIT 1

Ku-band: E1HU, E1VU, E2HU, E2VU, E3HU, E3VU, E1HD, E1VD, W1HD, W1VD

Telemetry: TLMA, TLMB

Command: CMD1, CMD2

ULPC: UPC