

TECHNICAL APPENDIX

AMC-11 AT 111.1° W.L

1.0 Overall Description: §25.114(d)(1)

This technical appendix is submitted in support of the application of SES Americom, Inc. (“SES”) for authority to relocate AMC-11 from 131° W.L. to 111.1° W.L.¹ to provide C-band capacity in North America. At 111.1° W.L., AMC-11 will operate utilizing the downlink frequency range 3.7 to 4.2 GHz² and uplink frequency range 5.925 to 6.425 GHz.

SES incorporates by reference the technical information it has already submitted regarding AMC-11³ and provides here technical information relating to the proposed modification.

2.0 Telemetry, Telecommand and Control Facilities

The telemetry, telecommand and control (TT&C) subsystem for the AMC-11 satellite will initially be carried out from SES earth stations in the United States identified on the most recent SES report pursuant to §25.172. Once the assignment of the license for AMC-11 to Telesat has been consummated, SES will perform TT&C for AMC-11 pursuant to a contract with Telesat.

3.0 Interference Analysis and Certifications: §25.140

SES certifies that the AMC-11 downlink EIRP densities will not exceed 3 dBW/4kHz for digital transmissions or 8 dBW/4kHz for analog transmissions in the C-band, unless higher levels are coordinated with the operators of authorized co-frequency space stations at assigned locations within six degrees of 111.1° W.L, and except under the provisions of §25.140(a)(3)(i) and notified as described in §25.140(d).

Furthermore, SES certifies that the levels of the uplink emissions in the C-band will not exceed the limits in §25.218 unless appropriately coordinated with operators of authorized co-frequency space stations at assigned locations within six degrees of 111.1° W.L and except as provided in §25.140(a)(3)(i) and notified as described in §25.140(d).

4.0 Mitigation of orbital debris: 25.114(d)(14)

The information required under §25.114(d)(14) of the Commission’s Rules was included in an Annex to the AMC-11 Modification and is incorporated by reference herein. Updates to the information on file are provided below.

¹ The Schedule S rounds the orbital location to 111° W.L., but the requested orbital location is 111.1° W.L.

² Any AMC-11 operations in the Contiguous U.S. (CONUS) will be limited to the 4.0-4.2 GHz band segment, while operations outside of CONUS may use the full 3.7-4.2 GHz frequencies.

³ See File Nos. SAT-LOA-20020104-00002 & SAT-MOD-20190813-00074 (AMC-11 Modification).

Safe Flight Profiles:

SES proposes to relocate AMC-11 to the 111.1° W.L. orbital location, where it will operate within a ± 0.05 degree E-W control box. AMC-11 will be collocated at 111.1° W.L. with Anik F2. SES and Telesat have physically coordinated the operation of AMC-11 and Anik F2 to avoid collisions. The only other satellite that has a stationkeeping volume that partially overlaps with that of AMC-11 and Anik F2 at 111.1° W.L. ± 0.05 degrees is WildBlue-1, which operates under Canadian authority at 111.17° W.L. ± 0.03 degrees, an overlap of 0.01 degrees with the AMC-11 and Anik F2 stationkeeping box.

Telesat and SES have developed a separation strategy for Anik F2, AMC-11 and WildBlue-1 to ensure safe operations. An eccentricity and inclination separation strategy will be implemented between AMC-11 and Anik F2. Because inclination separation will be provided by the fact that Anik F2 will be in inclined orbit (greater than 0.075 degrees), a strategy is only required to maintain the eccentricity separation. Anik F2 and AMC-11 will be operated applying the so-called Sun Pointing Perigee strategy along dedicated mean eccentricity control circle.

Mean Longitude separation will be used between WildBlue-1 and the Anik F2/AMC-11 satellite pair. Telesat, SES and ViaSat will exchange orbit and maneuver data to ensure safe separation between the satellites. The predicted orbit data (OEM file) of all three satellites, covering at least 14 days into the future, will be shared using a common file format.

SES is not aware of any other FCC- or non-FCC licensed spacecraft that are operational or planned to be deployed at 111.1° W.L. or to nearby orbital locations such that there would be an overlap with the station keeping volume of AMC-11.

DECLARATION

I, Ryan Henry, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing exhibit; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the exhibit and that it is complete and accurate to the best of my knowledge, information and belief.

/s/ Ryan Henry

Senior Manager, Spectrum Management and Development
SES

Dated: November 8, 2022