

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
SES Americom, Inc.)	File No. SAT-PPL-20180815-00062
)	Call Sign S3037
Request to Add NSS-11 to the Permitted)	
Space Station List for Ku-band Operations)	

RESPONSE OF SES AMERICOM, INC.

SES Americom, Inc. (“SES”) hereby responds to the comments filed by Eutelsat S.A. (“Eutelsat”)¹ with respect to the above-referenced petition for U.S. market access for the Gibraltar-licensed NSS-11 Ku-band spacecraft at 176° E.L. (the “NSS-11 Petition”). Eutelsat does not oppose the SES request for U.S. market access for NSS-11, and there is no obstacle to expedited Commission action to allow U.S. customers to begin using the spacecraft beginning on January 1, 2019. SES provides herein minor clarifications to the NSS-11 Petition that address the bulk of the Eutelsat Comments. SES strongly opposes, however, Eutelsat’s suggestion that authority for NSS-11 to serve U.S. earth stations in the 12.7-12.75 GHz band should be limited to mobility services.² Eutelsat has provided no justification for such a restriction, and the Eutelsat arguments mischaracterize the applicable Commission precedent.

Specifically, Eutelsat appears to rely on a misreading of the decision relating to its own EUTELSAT 172B satellite as the basis for its claim that NSS-11 should be permitted to provide only mobility services to the U.S. using the 12.7-12.75 GHz frequencies. Eutelsat provides a

¹ Comments of Eutelsat S.A., File No. SAT-PPL-20180815-00062, filed Nov. 19, 2018 (the “Eutelsat Comments”).

² *See id.* at 3-4.

brief and rather confusing version of the EUTELSAT 172B proceeding history, but having reviewed the relevant documents, SES sees nothing that would support Eutelsat's attempt to hamstring the operations of NSS-11.

The record shows that Eutelsat challenged a number of the specific conditions initially imposed on U.S. operations of EUTELSAT 172B in the 12.7-12.75 GHz band, arguing that the conditions were overly broad and unreasonable, particularly given the fact that EUTELSAT 172B was "optimized to communicate" with mobile terminals aboard aircraft and ships at sea.³ Eutelsat asked the Commission to either limit the scope of certain challenged conditions to operations of EUTELSAT 172B with fixed earth stations or to eliminate those provisions entirely.⁴ In support of its arguments, Eutelsat cited to other Commission authorizations involving the 12.7-12.75 GHz frequencies that did not include the provisions Eutelsat found objectionable in the case of EUTELSAT 172B.⁵ The International Bureau granted the ES 172 Clarification Request and reissued the license for EUTELSAT 172B with modified language that omitted the specific conditions Eutelsat had opposed.⁶

The Eutelsat Comments suggest that Eutelsat believes grant of the ES 172 Clarification Request was premised on EUTELSAT 172B's use of the 12.7-12.75 GHz frequencies for mobility services and that therefore EUTELSAT 172B is *only* permitted to provide mobility

³ ES 172 LLC Petition for Clarification or Reconsideration of License Conditions, and Request for Stay, File No. SAT-RPL-20170927-00136, filed May 29, 2018 ("ES 172 Clarification Request") at 1.

⁴ *Id.* at 2-3.

⁵ *See id.* at 7 & n.8, citing *Horizons-3 License LLC*, Call Sign S2947, File No. SAT-LOA-20151202-00080, granted July 6, 2016 (the "Horizons-3 Grant").

⁶ ES 172 LLC, File No. SAT-RPL-20170927-00136, grant reissued Sept. 5, 2018 ("Reissued ES 172 Grant").

services in that segment in the U.S.⁷ Eutelsat seeks to impose the same restriction on NSS-11 that it assumes applies to EUTELSAT 172B.⁸

The Reissued ES 172 Grant, however, provides no support for Eutelsat's view. Nothing in the authorization indicates that EUTELSAT 172B's use of the 12.7-12.75 GHz frequencies is constrained to mobility services. Thus, contrary to Eutelsat's claims, the EUTELSAT 172B precedent does not justify imposing any limitations on the types of services that NSS-11 can provide to U.S. customers in the 12.7-12.75 GHz frequencies. Instead, the Commission should authorize NSS-11 to utilize this band segment for any type of fixed-satellite service to U.S. users, subject to conditions consistent with those that have been imposed in comparable circumstances, including the Horizons-3 Grant and the Reissued ES 172 Grant.

The remaining issues raised in the Eutelsat Comments are easily dispatched. First, Eutelsat notes that NSS-11 operations in the 12.2-12.75 GHz frequencies should be authorized subject to earth station-specific licensing, as that band segment does not appear in the list of frequencies identified as eligible for the Permitted Space Station List under Section 25.103 of the Commission's rules.⁹ SES acknowledges that the NSS-11 Petition should have stated that SES was seeking U.S. market access, rather than inclusion on the Permitted Space Station List, for the 12.2-12.75 GHz band segment, but this distinction is irrelevant to the Commission's analysis. Under the *DISCO II* decision, the same framework that governs requests by foreign-licensed

⁷ See Eutelsat Comments at 3 ("Eutelsat understands that operations in the 12.7-12.75 GHz band segment in the United States are limited to mobility applications").

⁸ See *id.* at 3-4 (in light of "the policy and precedent established in the EUTELSAT 127B proceeding, the Commission similarly should limit NSS-11's access to the 12.7-12.75 GHz band segment to mobility applications").

⁹ *Id.* at 2-3 & n.4, citing 47 C.F.R. § 25.103.

satellites for addition to the Permitted Space Station List applies to petitions seeking U.S. market access for bands not included in the list.¹⁰ Thus, the public interest rationale presented in the NSS-11 Petition for allowing the satellite to serve U.S. customers¹¹ provides a valid basis for a grant of market access in the 12.2-12.75 GHz band.

Finally, Eutelsat alleges that the NSS-11 adjacent satellite compatibility analysis is lacking in some respects, although Eutelsat does not identify any unsatisfied Commission rules and admits that none of the matters is disqualifying.¹² Nevertheless, SES is attaching for inclusion in the record an updated compatibility analysis that addresses the Eutelsat concerns.

For the foregoing reasons, the Commission should expeditiously grant U.S. market access for NSS-11 in the Ku-band frequencies identified in the NSS-11 Petition. The Eutelsat request to restrict NSS-11 to mobility operations in the 12.7-12.75 GHz frequencies must be rejected as unwarranted and inconsistent with Commission precedent.

Respectfully submitted,

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Dated: December 4, 2018

¹⁰ See *Amendment of the Commission's Policies to Allow Non-U.S. Licensed Space Stations providing Domestic and International Service in the United States*, Report & Order, 12 FCC Rcd 24094 (1997) (“DISCO II”) at ¶ 192.

¹¹ NSS-11 Petition, Legal Narrative at 2-3.

¹² Eutelsat Comments at 4-5.

Annex B: Compatibility with Adjacent Satellites

At 174 E

Uplink

UPLINK				SES		
Ku-band	14100 MHz			off-axis	on-axis	
topocentric sep.	2.2 deg					
k	-228.6 dBK					
				SATH	-29.6	10.6
				NETH/NETV	-29.6	4.6
				CHTV	-29.6	-12.2
				ADJ.		
				off-axis	on-axis	
				NUH2/NUV2 WORST	-34.4	-0.2
				ADH4/ADV4 FWD Bes	-41.4	-7.3
				ADH4/ADV4 RTN Best	-30.6	-7.9
				TV Carrier	-42.1	-7.9
				EUH2/EUV2 Worst	-30.4	-15.3

Downlink

DOWNLINK

Ku-band 12700 MHz
topocentric sep. 2.2 deg
k -228.6 dBK

SES

	off-axis	on-axis
SATH	-9.9	6.5
NETH/NETV	-0.7	21.0
CHTV	-0.7	18.5

SES carriers	SATH	NETH/NETV	CHTV
Bandwidth, MHz	54	36	36
Carrier EIRP density, dBW/Hz	-30.4	-21.2	-21.2
Satellite EIRP max, dBW	46.96	54.41	54.41
Rx ES ant. Dia., m	0.65	1.2	0.9
Rx ES ant. Gain, dBi	36.9	42.2	39.7
Sidelobe gain, dBi	20.4	20.4	20.4
Noise Temp, K	148	162	162
C/N (thermal), dB	6.4	20.5	18.0

ADJ.

	-5.3	8.8
ADH4/ADV4	-5.3	16.5
ADH4/ADV4 FWD Best	-5.3	28.0
ADH4/ADV4 RTN Best	-6.0	13.3
TV Carrier	-5.3	28.0

Adjacent Satellite carriers	ADH4/ADV4 WORST	ADH4/ADV4 FWD Best	ADH4/ADV4 RTN Best	TV Carrier	EUH2/EUV2 Worst
Carrier EIRP density, dBW/Hz	-25.74	-25.70	-25.70	-26.40	-25.70
Downlink EIRP, dBW	43.6	38.9	29	49.5	24.1
Rx ES ant. Dia., m	0.5	1.2	4.5	0.9	4.5
Rx ES ant. Gain, dBi	34.6	42.2	53.7	39.7	53.7
Sidelobe gain, dBi	20.4	20.4	20.4	20.4	20.4
Noise Temp, K	205	173	189	166	189
C/N (thermal), dB	7.3	15.7	26.8	12.7	26.8

Adj. Sat carriers	SATH	NETH/NETV	CHTV
ADH4/ADV4	11.8	26.3	23.8
ADH4/ADV4 FWD Best	11.8	26.3	23.8
ADH4/ADV4 RTN Best	11.8	26.3	23.8
TV Carrier	12.5	27.0	24.5
EUH2/EUV2 Worst	11.8	26.3	23.8

Uplink C/I into adjacent sat carriers due to interference from SES carriers

Adj. Sat carriers	SATH	NETH/NETV	CHTV
ADH4/ADV4	18.8	9.6	9.6
ADH4/ADV4 FWD Best	26.4	17.2	17.2
ADH4/ADV4 RTN Best	37.9	28.7	28.7
TV Carrier	23.2	14.0	14.0
EUH2/EUV2 Worst	37.9	28.7	28.7

Summary

SES C/N
C/I into SES
C/N+I
Minimum required C/I
Excess Margin

	SATH	NETH/NETV	CHTV
SES C/N	6.4	18.0	17.8
C/I into SES	12.5	27.0	24.5
C/N+I	5.4	17.5	17.0
Minimum required C/I	-2.4	13.0	13.0
Excess Margin	8.8	5.0	4.8

Summary Adj

Adj C/N
C/I from SES
C/N+I

	ADH4/ADV4	ADH4/ADV4 FWD Best	ADH4/ADV4 RTN Best	TV Carrier	EUH2/EUV2 Worst
Adj C/N	7.3	15.7	26.8	12.7	26.8
C/I from SES	18.8	26.4	37.9	23.2	23.2
C/N+I	7.02	15.35	26.47	12.33	21.64

Overall

176E	SATH	NETH/NETV	CHTV
C/N Uplink	15.3	31.8	38.6
C/N Downlink	6.4	18.0	17.8
C/I Uplink 174E	52.7	46.6	29.8
C/I Downlink 174E	12.5	27.0	24.5
C/I Uplink 178E	40.3	34.2	17.4
C/I Downlink 178E	16.4	31.0	28.5
C/N+I overall	4.7	17.1	13.9
C/N required margin	-6.1 10.8	6.9 10.2	6.9 7.0

	ADH4/ADV4	ADH4/ADV4 FWD Best	ADH4/ADV4 RTN Best	TV Carrier	EUH2/EUV2 Worst
174E					
C/N Uplink	20.7	18.1	20.4	17.4	4.3
C/N Downlink	7.3	15.7	26.8	12.7	26.8
C/I Uplink 176E	29.3	22.3	21.7	21.6	14.3
C/I Downlink 176E	18.8	26.4	37.9	23.2	23.2
C/I Uplink 172E	29.3	22.3	21.7	21.6	14.3
C/I Downlink 172E	18.8	26.4	37.9	23.2	23.2
C/N+I overall	6.5	12.3	16.0	10.2	3.4
C/N required margin	-0.4 6.9	8.2 4.1	10.1 5.9	3.9 6.3	2.9 0.5

At 178E

Uplink

UPLINK

Ku-band	14250 MHz
topocentric sep.	2.2 deg
k	-228.6 dBK

SES

	off-axis	on-axis
SATH	-29.6	10.7
NETH/NETV	-29.6	4.7
CHTV	-29.6	-12.1

SES carriers	SARV	NERH/NERV	CHRH
Bandwidth, MHz	36	36	36
UL flange power dens., dBW/Hz	-50	-50	-50
UL ant. Dia, m	9	4.5	0.65
UL ant. Gain, dBi	60.7	54.7	37.9
UL EIRP, dBW	86.3	80.2	63.4
UL flange power, dBW	25.6	25.6	25.6
UL EIRP density, dBW/Hz	10.7	4.7	-12.1
Sidelobe gain, dBi	20.4	20.4	20.4
Off-ax. EIRP dens, dBW/Hz	-29.6	-29.6	-29.6
G/T, dB/K	12.13	5.59	6.42
C/N (thermal), dB	44.4	31.9	15.9

ADJ.

	off-axis	on-axis
SATH-2	-29.6	10.7
NETH/NETV-2	-29.6	4.7
CHTV-2	-29.6	-12.1

SES carriers	SARV	NERH/NERV	CHRH
Bandwidth, MHz	36	36	36
UL flange power dens., dBW/Hz	-50	-50	-50
UL ant. Dia, m	9	4.5	0.65
UL ant. Gain, dBi	60.7	54.7	37.9
UL EIRP, dBW	86.3	80.2	63.4
UL flange power, dBW	25.6	25.6	25.6
UL EIRP density, dBW/Hz	10.7	4.7	-12.1
Sidelobe gain, dBi	20.4	20.4	20.4
Off-ax. EIRP dens, dBW/Hz	-29.6	-29.6	-29.6
G/T, dB/K	12.13	5.59	6.42
C/N (thermal), dB	44.4	31.9	15.9

Summary

	SATH	NETH/NETV	CHTV
SES C/N	34.8	34.5	31.0
C/I into SES	40.3	34.2	17.4
C/N+I	33.74	31.35	17.24

Summary Adj

	Beam A	Beam B	Beam C
Adj C/N	34.8	34.5	31.0
C/I from SES	40.3	34.2	17.4
C/N+I	33.74	31.35	17.24

Uplink C/I into SES carriers due to interference from adj. satellite

	SES carriers		
Adj. Sat carriers	SATH	NETH/NETV	CHTV
SATH-2	40.3	34.2	17.4
NETH/NETV-2	40.3	34.2	17.4
CHTV-2	40.3	34.2	17.4

Uplink C/I into adjacent sat carriers due to interference from SES carriers

	SES carriers		
Adj. Sat carriers	SATH	NETH/NETV	CHTV
SATH-2	40.3	40.3	40.3
NETH/NETV-2	34.2	34.2	34.2
CHTV-2	17.4	17.4	17.4

Downlink

DOWNLINK

Ku-band 12700 MHz
topocentric sep. 2.2 deg
k -228.6 dBK

SES

	off-axis	on-axis
SATH	-9.9	6.5
NETH/NETV	-0.7	21.0
CHTV	-0.7	18.5

SES carriers	SATH	NETH/NETV	CHTV
Bandwidth, MHz	54	36	36
Carrier EIRP density, dBW/Hz	-30.4	-21.2	-21.2
Satellite EIRP max, dBW	46.96	54.41	54.41
Rx ES ant. Dia., m	0.65	1.2	0.9
Rx ES ant. Gain, dBi	36.9	42.2	39.7
Sidelobe gain, dBi	20.4	20.4	20.4
Noise Temp, K	148	162	162
C/N (thermal), dB	6.4	20.5	18.0

ADJ.

SATH-2	-9.9	6.5
NETH/NETV-2	-0.7	21.0
CHTV-2	-0.7	18.5

Adjacent Satellite carriers	SATH	NETH/NETV	CHTV
Bandwidth, MHz	54	36	36
Carrier EIRP density, dBW/Hz	-30.4	-21.2	-21.2
Satellite EIRP max, dBW	46.96	54.41	54.41
Carrier EIRP, dBW	47.0	54.4	54.4
Rx ES ant. Dia., m	0.65	1.2	0.9
Rx ES ant. Gain, dBi	36.9	42.2	39.7
Sidelobe gain, dBi	20.4	20.4	20.4
Noise Temp, K	148	162	162
C/N (thermal), dB	6.4	20.5	18.0

Summary
SES C/N
C/I into SES
C/N+I

	SATH	NETH/NETV	CHTV
SES C/N	6.4	20.5	18.0
C/I into SES	16.4	31.0	28.5
C/N+I	5.99	20.13	17.63

Uplink C/I into SES carriers due to interference from adj. satellite

	SES carriers		
Adj. Sat carriers	SATH	NETH/NETV	CHTV
SATH-2	16.4	31.0	28.5
NETH/NETV-2	7.2	21.7	19.3
CHTV-2	7.2	21.7	19.3

Summary Adj
Adj C/N
C/I from SES
C/N+I

	Beam A	Beam B	Beam C
Adj C/N	6.4	20.5	18.0
C/I from SES	16.4	31.0	28.5
C/N+I	5.99	20.13	17.63

Uplink C/I into adjacent sat carriers due to interference from SES carriers

	SES carriers		
Adj. Sat carriers	SATH	NETH/NETV	CHTV
SATH-2	16.4	31.0	28.5
NETH/NETV-2	7.2	21.7	19.3
CHTV-2	7.2	21.7	19.3

	<u>Overall</u>		
178E	SATH-2	NETH/NETV-2	CHTV-2
C/N Uplink	34.8	34.5	31.0
C/N Downlink	6.4	20.5	18.0
C/I Uplink 176E	40.3	34.2	17.4
C/I Downlink 176E	16.4	31.0	28.5
C/I Uplink 180E	40.3	34.2	17.4
C/I Downlink 180E	16.4	31.0	28.5
C/N+I overall	5.6	19.4	12.5
C/N required	-6.1	6.9	6.9
margin	11.7	12.5	5.6

Assuming the satellites at 178E and 180E have the same parameters as NSS-11

CERTIFICATE OF SERVICE

I hereby certify that on this 4th day of December, 2018, I caused a true and correct copy of the foregoing “Response of SES Americom, Inc.” to be sent by first class mail, postage prepaid, to the following:

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