



UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
RADIO STATION AUTHORIZATION

Name: AC BidCo LLC

Call Sign: E120106

Authorization Type: Modification of License

File Number: SES-MFS-20171220-01351

Non Common Carrier

Grant date: 03/09/2018

Expiration Date: 05/01/2028



Nature of Service: Earth Station Aboard Aircraft

Nature of Service: Fixed Satellite Service

Class of Station: Blanket Earth Stations

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1)	AES1	UP TO 1000 ESAA TERMINALS (0.24 m) 111 N. CANAL ST. CONUS and OCONUS, Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.			0	NA	
2)	AES2	UP TO 1000 ESAA TERMINALS (0.74 m) 111 N. CANAL ST. CONUS and OCONUS, Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.				NA	

Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning May 1, 2013 (3 AM Eastern Standard Time) and ending May 1, 2028 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is March 9, 2019 (3 AM Eastern Standard Time). Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

B) Particulars of Operations

The General Provision 1010 applies to all receiving frequency bands.

The General Provision 1900 applies to all transmitting frequency bands.

For the text of these provisions, refer to Section H.

#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	14000.0000-14500.0000	H,V	4M10G7D	Tx	38.10	8.00	AES1		DIGITAL DATA SERVICES
2)	14000.0000-14500.0000	H,V	9M36G7D	Tx	42.32	9.77	AES1		DIGITAL DATA SERVICES
3)	14000.0000-14500.0000	H,V	1M00G7W	Tx	44.33	20.35	AES1		DIGITAL DATA SERVICES
4)	14000.0000-14500.0000	H,V	1M20G7W	Tx	44.20	19.43	AES1		DIGITAL DATA SERVICES



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5)	14000.0000-14500.0000	H,V	1M40G7D	Tx	44.60	19.10	AES1		DIGITAL DATA SERVICES
6)	14000.0000-14500.0000	H,V	1M67G7W	Tx	42.74	16.54	AES1		DIGITAL DATA SERVICES
7)	14000.0000-14500.0000	H,V	1M75G7W	Tx	43.10	16.69	AES1		DIGITAL DATA SERVICES
8)	14000.0000-14500.0000	H,V	2M00G7W	Tx	44.50	17.50	AES1		DIGITAL DATA SERVICES
9)	14000.0000-14500.0000	H,V	2M30G7W	Tx	44.50	16.90	AES1		Digital Data Services
10)	14000.0000-14500.0000	H,V	2M34G7D	Tx	44.63	18.11	AES1		DIGITAL DATA SERVICES
11)	14000.0000-14500.0000	H,V	2M40G7D	Tx	43.89	16.91	AES1		DIGITAL DATA SERVICES
12)	14000.0000-14500.0000	H,V	2M50G7D	Tx	44.57	17.76	AES1		DIGITAL DATA SERVICES
13)	14000.0000-14500.0000	H,V	2M50G7W	Tx	44.25	16.29	AES1		Digital Data Services
14)	14000.0000-14500.0000	H,V	3M00G7W	Tx	44.50	15.75	AES1		DIGITAL DATA SERVICES
15)	14000.0000-14500.0000	H,V	3M66G7D	Tx	44.55	16.06	AES1		DIGITAL DATA SERVICES
16)	14000.0000-14500.0000	H,V	3M79G7D	Tx	44.48	15.83	AES1		DIGITAL DATA SERVICES
17)	14000.0000-14500.0000	H,V	3M89G7D	Tx	44.55	15.79	AES1		DIGITAL DATA SERVICES
18)	14000.0000-14500.0000	H,V	3M90G7D	Tx	44.49	15.75	AES1		DIGITAL DATA SERVICES
19)	14000.0000-14500.0000	H,V	4M00G7W	Tx	44.50	14.50	AES1		DIGITAL DATA SERVICES
20)	14000.0000-14500.0000	H,V	4M10G7D	Tx	42.80	12.70	AES1		DIGITAL DATA SERVICES
21)	14000.0000-14500.0000	H,V	5M00G7W	Tx	44.50	13.50	AES1		DIGITAL DATA SERVICES
22)	14000.0000-14500.0000	H,V	6M00G7D	Tx	44.40	12.70	AES1		DIGITAL DATA SERVICES
23)	14000.0000-14500.0000	H,V	6M35G7W	Tx	43.70	11.69	AES1		Digital Data Services
24)	14000.0000-14500.0000	H,V	6M56G7D	Tx	44.43	12.28	AES1		DIGITAL DATA SERVICES
25)	14000.0000-14500.0000	H,V	6M57G7D	Tx	44.53	13.51	AES1		DIGITAL DATA SERVICES
26)	14000.0000-14500.0000	H,V	6M76G7W	Tx	43.50	11.22	AES1		DIGITAL DATA SERVICES
27)	14000.0000-14500.0000	H,V	6M94G7D	Tx	44.45	12.05	AES1		DIGITAL DATA SERVICES
28)	14000.0000-14500.0000	H,V	830KG7W	Tx	42.40	19.22	AES1		DIGITAL DATA SERVICES



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#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
29)	14000.0000-14500.0000	H,V	882KG7D	Tx	44.56	22.59	AES1		DIGITAL DATA SERVICES
30)	14000.0000-14500.0000	H,V	8M00G7D	Tx	44.50	11.49	AES1		DIGITAL DATA SERVICES
31)	14000.0000-14500.0000	H,V	8M19G7D	Tx	43.20	10.10	AES1		DIGITAL DATA SERVICES
32)	14000.0000-14250.0000	H,V	2M05G7W	Tx	42.67	15.57	AES1		Digital Data Services
33)	12200.0000-12750.0000	H,V	30M0G7D	Rx	0.00	0.00	AES1		Digital Data Services
34)	11700.0000-12200.0000	H,V	30M0G7D	Rx			AES1		Digital Data Services
35)	11450.0000-11700.0000	H,V	30M0G7D	Rx			AES1		Digital Data Services
36)	11200.0000-11450.0000	H,V	30M0G7W	Rx			AES1		Digital Data Services
37)	10950.0000-11200.0000	H,V	30M0G7D	Rx			AES1		Digital Data Services
38)	10700.0000-12750.0000	H,V	138MG7W	Rx			AES1	90457	DIGITAL DATA SERVICES
39)	14000.0000-14500.0000	H,V	7M17G7D	Tx	40.90	8.40	AES2		DIGITAL DATA SERVICES
40)	14000.0000-14500.0000	H,V	7M20G7W	Tx	42.43	9.88	AES2		DIGITAL DATA SERVICES
41)	14000.0000-14500.0000	H,V	7M28G7D	Tx	41.60	9.00	AES2		DIGITAL DATA SERVICES
42)	14000.0000-14500.0000	H,V	7M40G7D	Tx	41.40	8.70	AES2		DIGITAL DATA SERVICES
43)	14000.0000-14500.0000	H,V	7M50G7D	Tx	41.60	8.90	AES2		DIGITAL DATA SERVICES
44)	14000.0000-14500.0000	H,V	1M00G7W	Tx	44.71	20.73	AES2		DIGITAL DATA SERVICES
45)	14000.0000-14500.0000	H,V	1M20G7W	Tx	44.50	19.73	AES2		DIGITAL DATA SERVICES
46)	14000.0000-14500.0000	H,V	1M51G7D	Tx	44.60	18.90	AES2		DIGITAL DATA SERVICES
47)	14000.0000-14500.0000	H,V	1M75G7W	Tx	42.60	16.19	AES2		DIGITAL DATA SERVICES
48)	14000.0000-14500.0000	H,V	1M80G7D	Tx	43.20	16.60	AES2		DIGITAL DATA SERVICES
49)	14000.0000-14500.0000	H,V	2M00G7D	Tx	43.90	16.90	AES2		DIGITAL DATA SERVICES
50)	14000.0000-14500.0000	H,V	2M00G7D	Tx	44.60	17.60	AES2		DIGITAL DATA SERVICES
51)	14000.0000-14500.0000	H,V	2M00G7W	Tx	46.98	19.99	AES2		DIGITAL DATA SERVICES
52)	14000.0000-14500.0000	H,V	2M10G7D	Tx	44.20	17.00	AES2		DIGITAL DATA SERVICES



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#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
53)	14000.0000-14500.0000	H,V	2M27G7D	Tx	44.60	17.00	AES2		DIGITAL DATA SERVICES
54)	14000.0000-14500.0000	H,V	2M40G7D	Tx	44.50	16.70	AES2		DIGITAL DATA SERVICES
55)	14000.0000-14500.0000	H,V	2M50G7W	Tx	48.70	20.74	AES2		DIGITAL DATA SERVICES
56)	14000.0000-14500.0000	H,V	3M00G7D	Tx	44.50	15.70	AES2		DIGITAL DATA SERVICES
57)	14000.0000-14500.0000	H,V	3M00G7W	Tx	50.20	21.40	AES2		DIGITAL DATA SERVICES
58)	14000.0000-14500.0000	H,V	3M60G7D	Tx	44.60	15.00	AES2		DIGITAL DATA SERVICES
59)	14000.0000-14500.0000	H,V	4M00G7W	Tx	45.94	15.94	AES2		DIGITAL DATA SERVICES
60)	14000.0000-14500.0000	H,V	4M10G7D	Tx	41.60	11.50	AES2		DIGITAL DATA SERVICES
61)	14000.0000-14500.0000	H,V	4M80G7D	Tx	44.60	13.80	AES2		DIGITAL DATA SERVICES
62)	14000.0000-14500.0000	H,V	5M05G7W	Tx	45.50	14.49	AES2		DIGITAL DATA SERVICES
63)	14000.0000-14500.0000	H,V	5M60G7D	Tx	44.50	13.00	AES2		DIGITAL DATA SERVICES
64)	14000.0000-14500.0000	H,V	5M64G7D	Tx	40.70	13.10	AES2		DIGITAL DATA SERVICES
65)	14000.0000-14500.0000	H,V	5M83G7D	Tx	44.50	12.90	AES2		DIGITAL DATA SERVICES
66)	14000.0000-14500.0000	H,V	5M97G7D	Tx	43.10	11.40	AES2		DIGITAL DATA SERVICES
67)	14000.0000-14500.0000	H,V	6M00G7W	Tx	45.08	13.32	AES2		DIGITAL DATA SERVICES
68)	14000.0000-14500.0000	H,V	6M35G7W	Tx	44.80	12.79	AES2		DIGITAL DATA SERVICES
69)	14000.0000-14500.0000	H,V	6M72G7D	Tx	42.30	10.00	AES2		DIGITAL DATA SERVICES
70)	14000.0000-14500.0000	H,V	7M48G7W	Tx	43.87	11.15	AES2		DIGITAL DATA SERVICES
71)	14000.0000-14500.0000	H,V	8M00G7D	Tx	44.60	11.60	AES2		DIGITAL DATA SERVICES
72)	14000.0000-14500.0000	H,V	8M10G7D	Tx	43.20	10.10	AES2		DIGITAL DATA SERVICES
73)	14000.0000-14500.0000	H,V	930KG7W	Tx	42.40	18.74	AES2		DIGITAL DATA SERVICES
74)	14000.0000-14250.0000	H,V	2M05G7W	Tx	41.70	14.60	AES2		DIGITAL DATA SERVICES
75)	12250.0000-12750.0000	H,V	30M0G7D	Rx			AES2		DIGITAL DATA SERVICES
76)	11700.0000-12200.0000	H,V	30M0G7D	Rx			AES2		DIGITAL DATA SERVICES



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#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
77)	11450.0000-11700.0000	H, V	30M0G7D	Rx			AES2		DIGITAL DATA SERVICES
78)	11200.0000-11450.0000	H, V	30M0G7W	Rx			AES2		DIGITAL DATA SERVICES
79)	10950.0000-11200.0000	H, V	30M0G7D	Rx			AES2		DIGITAL DATA SERVICES
80)	10700.0000-12750.0000	H, V	138MG7W	Rx			AES2	90457 90458	DIGITAL DATA SERVICES

C) Frequency Coordination Limits

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
1)	14000.0000-14500.0000	302.0E	302.0E	05.0	05.0	000.0	000.0	-3.9	AES1
2)	14000.0000-14500.0000	101.0W	101.0W	05.0	05.0	000.0	000.0	-2	AES1
3)	14000.0000-14500.0000	315.0E	315.0E	05.0	05.0	000.0	000.0	-3.9	AES1
4)	12250.0000-12750.0000	166.0E	166.0E	05.0	05.0	000.0	000.0		AES1
5)	14000.0000-14500.0000	166.0E	166.0E	05.0	05.0	000.0	000.0	-3.9	AES1
6)	11700.0000-12200.0000	101.0W	101.0W	05.0	05.0	000.0	000.0		AES1
7)	11700.0000-11950.0000	315.0E	315.0E	05.0	05.0	000.0	000.0		AES1
8)	11700.0000-12200.0000	302.0E	302.0E	05.0	05.0	000.0	000.0		AES1
9)	12500.0000-12750.0000	338.0E	338.0E	05.0	05.0				AES1
10)	14000.0000-14500.0000	338.0E	338.0E	05.0	05.0			-3.9	AES1
11)	11450.0000-11700.0000	302.0E	302.0E	05.0	05.0			0	AES1
12)	12250.0000-12500.0000	72.1E	72.1E	05.0	05.0	-000.0			AES1
13)	14000.0000-14500.0000	72.1E	72.1E	05.0	05.0			-3.9	AES1
14)	11700.0000-12200.0000	172.0E	172.0E	05.0	05.0				AES1
15)	14000.0000-14500.0000	40.5W	40.5W	05.0	05.0			0.6	AES1
16)	14000.0000-14500.0000	60.0E	60.0E	05.0	05.0			-1	AES1
17)	14000.0000-14500.0000	114.9W	114.9W	05.0	05.0			-4	AES1
18)	14000.0000-14500.0000	172.0E	172.0E	05.0	05.0			5.1	AES1
19)	10950.0000-11200.0000	172.0E	172.0E	05.0	05.0				AES1
20)	11450.0000-11700.0000	172.0E	172.0E	05.0	05.0				AES1



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#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
21)	12200.0000-12750.0000	172.0E	172.0E	05.0	05.0				AES1
22)	10950.0000-11200.0000	40.5W	40.5W	05.0	05.0				AES1
23)	10950.0000-11200.0000	60.0E	60.0E	05.0	05.0				AES1
24)	11450.0000-11700.0000	60.0E	60.0E	05.0	05.0				AES1
25)	11700.0000-12200.0000	114.9W	114.9W	05.0	05.0				AES1
26)	14000.0000-14500.0000	37.5W	37.5W	05.0	05.0			-11.5	AES1
27)	14000.0000-14500.0000	138.0E	138.0E	05.0	05.0			-11.5	AES1
28)	11450.0000-11700.0000	37.5W	37.5W	05.0	05.0				AES1
29)	12250.0000-12750.0000	138.0E	138.0E	05.0	05.0				AES1
30)	14000.0000-14500.0000	90.0E	91.0W	05.0	05.0	090.0	270.0	0.06	AES1
31)	10950.0000-11200.0000	90.0E	91.0W	05.0	05.0	090.0	270.0		AES1
32)	11450.0000-11700.0000	90.0E	91.0W	05.0	05.0	090.0	270.0		AES1
33)	11700.0000-12200.0000	90.0E	91.0W	05.0	05.0	090.0	270.0		AES1
34)	12200.0000-12750.0000	90.0E	91.0W	05.0	05.0	090.0	270.0		AES1
35)	11200.0000-11450.0000	180.0E	180.0W	05.0	05.0	090.0	270.0		AES1
36)	14000.0000-14500.0000	180.0E	180.0W	05.0	05.0	090.0	270.0	0.6	AES1
37)	14000.0000-14500.0000	81.0W	81.0W	05.0	05.0	090.0	270.0		AES1
38)	11700.0000-12200.0000	81.0W	81.0W	05.0	05.0	090.0	270.0		AES1
39)	10700.0000-12750.0000	180.0W	177.0W	05.0	05.0	000.0	000.0		AES1
40)	14000.0000-14500.0000	138.0E	138.0E	15.0	15.0			-14.8	AES2
41)	14000.0000-14500.0000	166.0E	166.0E	15.0	15.0			-18.6	AES2
42)	14000.0000-14500.0000	302.0E	302.0E	15.0	15.0			-25	AES2
43)	14000.0000-14500.0000	315.0E	315.0E	15.0	15.0			-22.5	AES2
44)	14000.0000-14500.0000	319.5E	319.5E	15.0	15.0			-17.5	AES2
45)	14000.0000-14500.0000	338.0E	338.0E	15.0	15.0			-18.4	AES2
46)	10950.0000-11200.0000	37.5W	37.5W	12.0	12.0				AES2
47)	10950.0000-11200.0000	60.0E	60.0E	15.0	15.0				AES2
48)	10950.0000-11200.0000	319.5E	319.0E	15.0	15.0				AES2
49)	11450.0000-11700.0000	37.5W	37.5W	15.0	15.0				AES2
50)	14000.0000-14500.0000	37.5W	37.5W	12.0	12.0	000.0		-20.5	AES2
51)	14000.0000-14500.0000	60.0E	60.0E	15.0	15.0			-7.1	AES2
52)	14000.0000-14500.0000	72.1E	72.1E	15.0	15.0			-26.4	AES2
53)	14000.0000-14500.0000	101.0W	101.0W	15.0	15.0			-21.4	AES2
54)	14000.0000-14500.0000	114.9W	114.9W	15.0	15.0			-19.5	AES2



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		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
55)	12250.0000-12750.0000	166.0E	166.0E	15.0	15.0				AES2
56)	11450.0000-11700.0000	60.0W	60.0W	15.0	15.0				AES2
57)	11450.0000-11700.0000	302.0E	302.0E	15.0	15.0				AES2
58)	11450.0000-11700.0000	319.5E	319.5E	15.0	15.0				AES2
59)	11700.0000-12200.0000	101.0W	101.0W	15.0	15.0				AES2
60)	11700.0000-12200.0000	114.9W	114.9W	15.0	15.0				AES2
61)	11700.0000-12200.0000	302.0E	302.0E	15.0	15.0				AES2
62)	11700.0000-12200.0000	315.0E	315.0E	15.0	15.0				AES2
63)	12250.0000-12750.0000	138.0E	138.0E	15.0	15.0				AES2
64)	12250.0000-12750.0000	72.1W	72.1W	15.0	15.0				AES2
65)	12500.0000-12750.0000	37.5W	37.5W	15.0	15.0				AES2
66)	12500.0000-12750.0000	338.0E	338.0E	15.0	15.0				AES2
67)	14000.0000-14500.0000	90.0E	91.0W	12.5	12.5	090.0	270.0	-7.1	AES2
68)	10950.0000-11200.0000	90.0E	91.0W	12.5	12.5	090.0	270.0		AES2
69)	11450.0000-11700.0000	90.0E	91.0W	12.5	12.5	090.0	270.0		AES2
70)	11700.0000-12200.0000	90.0E	91.0W	12.5	12.5	090.0	270.0		AES2
71)	12200.0000-122750.000	90.0E	91.0W	12.5	12.5	090.0	270.0		AES2
72)	14000.0000-14500.0000	180.0E	180.0W	12.5	12.5	090.0	270.0	-7.1	AES2
73)	11200.0000-11450.0000	180.0E	180.0W	12.5	12.5	090.0	270.0		AES2
74)	14000.0000-14500.0000	81.0W	81.0W	05.0	05.0	090.0	270.0		AES2
75)	11700.0000-12200.0000	81.0W	81.0W	05.0	05.0	090.0	270.0		AES2
76)	10700.0000-12750.0000	180.0W	177.0W	05.0	05.0	000.0	000.0		AES2

D) Points of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1) AES1 to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
- 2) AES1 to INTELSAT 19 (S2850) @ 166.0 degrees E.L. (U.S.-licensed)
- 3) AES1 to INTELSAT 14 (S2785) @ 45 degrees W.L. (U.S.-licensed)
- 4) AES1 to INTELSAT 21 (S2863) @ 58.0 degrees W.L. (U.S.-licensed)
- 5) AES1 to SES-4 (S2828) @ 22 degrees W.L. (Netherlands-licensed)
- 6) AES1 to INTELSAT 22 (S2846) @ 72.1 degrees E.L. (U.S.-licensed)
- 7) AES1 to SES-6 (S2870) @ 40.5 degrees W.L. (Netherlands-licensed)
- 8) AES1 to TELSTAR 11N (S2357) @ 37.55 degrees W.L. (U.S.-licensed)



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Non Common Carrier

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D) Points of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 9) AES1 to INTELSAT 904 (S2408) @ 60 degrees E.L. (U.S.-licensed)
- 10) AES1 to INTELSAT 18 (S2817) @ 180 degrees E.L. (U.S.-licensed)
- 11) AES1 to EUTELSAT 117WA (S2873) @ 116.8 degrees W.L. (formerly SATMEX 8) (Mexico-licensed)
- 12) AES1 to JCSAT 5A (M063130) @ 132 degrees E.L. (Japan-licensed)
- 13) AES1 to GALAXY 17 (S2715) @ 91 degrees W.L. (U.S.-licensed)
- 14) AES1 to AMC 1 (S2445) @ 130.90 degrees W.L. (U.S.-licensed)
- 15) AES1 to EUTELSAT 115WB (S2938) @ 114.9 degrees W.L. (formerly SATMEX 7) (Mexico-licensed)
- 16) AES1 to Yamal 401 @ 90 degrees E.L. (Russia-licensed)
- 17) AES1 to Yamal 300K (M174162) @ 177 degrees W.L. (Russia-licensed)
- 18) AES1 to JCSAT-2B (M174163) @ 154 degrees E.L. (Japan-licensed)
- 19) AES1 to ASIASESAT 7 (M174161) @ 105.5 degrees E.L. (China-licensed)
- 20) AES1 to INTELSAT 907 (S2411) @ 27.5 degrees W.L. (U.S.-licensed)
- 21) AES1 to INTELSAT 29e (S2913) @ 50.0 degrees W.L. (U.S.-licensed)
- 22) AES1 to INTELSAT 20 (S2847) @ 68.5 degrees E.L. (U.S.-licensed)
- 23) AES1 to AMC 21 (S2676) @ 124.9 degrees W.L. (United Kingdom-licensed)
- 24) AES1 to INTELSAT 33e (S2939) @ 60.0 degrees E.L. (U.S.-licensed)
- 25) AES1 to ASTRA 4A @ 4.8 degrees E.L. (Sweden Licensed)
- 26) AES1 to TELSTAR 12V (S2933) @ 15 degrees W.L. (U.S.-licensed)
- 27) AES1 to SES-2 @ 87 ° W.L. (U.S.-licensed satellite)
- 28) AES1 to GALAXY 28 (S2160) @ 89 degrees W.L. (U.S.-licensed)
- 29) AES1 to SES-3 (S2892) @ 103 degrees W.L. (U.S.-licensed)
- 30) AES1 to ARSAT-2 (S2956) @ 81.0 degrees W.L. (Argentina-licensed)
- 31) AES1 to SES-10 (S2950) @ 66.9 degrees W.L. (U.S.-licensed)
- 32) AES1 to AMC-6 (S2347) @ 83degrees W.L. (U.S.-licensed)
- 33) AES1 to OPTUS D2(M221170) @ 152 E.L. (Australia Licensed)
- 34) AES1 to AMC-4 (S2135)@ 134.9 degrees W.L. (U.S.-licensed)
- 35) AES1 to Telstar 18 / Apstar 5 @ 138 degrees E.L. (Non-U.S.-licensed) (SES-MOD-20100803-00977)
- 36) AES1 to EUTELSAT 172B (S3021) @ 172degrees E.L. (US & France licensed)
- 37) AES1 to SES-15 (S2951) @ 129.15 degrees W.L. (United Kingdom-licensed)
- 38) AES2 to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
- 39) AES2 to INTELSAT 19 (S2850) @ 166.0 degrees E.L. (U.S.-licensed)
- 40) AES2 to INTELSAT 14 (S2785) @ 45 degrees W.L. (U.S.-licensed)
- 41) AES2 to INTELSAT 21 (S2863) @ 58.0 degrees W.L. (U.S.-licensed)
- 42) AES2 to SES-4 (S2828) @ 22 degrees W.L. (Netherlands-licensed)
- 43) AES2 to INTELSAT 22 (S2846) @ 72.1 degrees E.L. (U.S.-licensed)



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Non Common Carrier

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D) Points of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

-
- 44) AES2 to SES-6 (S2870) @ 40.5 degrees W.L. (Netherlands-licensed)
 - 45) AES2 to TELSTAR 11N (S2357) @ 37.55 degrees W.L. (U.S.-licensed)
 - 46) AES2 to INTELSAT 904 (S2408) @ 60 degrees E.L. (U.S.-licensed)
 - 47) AES2 to INTELSAT 18 (S2817) @ 180 degrees E.L. (U.S.-licensed)
 - 48) AES2 to EUTELSAT 117WA (S2873) @ 116.8 degrees W.L. (formerly SATMEX 8) (Mexico-licensed)
 - 49) AES2 to GALAXY 17 (S2715) @ 91 degrees W.L. (U.S.-licensed)
 - 50) AES2 to Telstar 18 / Apstar 5 @ 138 degrees E.L. (Non-U.S.-licensed) (SES-MOD-20100803-00977)
 - 51) AES2 to EUTELSAT 115WB (S2938) @ 114.9 degrees W.L. (formerly SATMEX 7) (Mexico-licensed)
 - 52) AES2 to Yamal 401 @ 90 degrees E.L. (Russia-licensed)
 - 53) AES2 to Yamal 300K (M174162) @ 177 degrees W.L. (Russia-licensed)
 - 54) AES2 to JCSAT-2B (M174163) @ 154 degrees E.L. (Japan-licensed)
 - 55) AES2 to ASIASEAT 7 (M174161) @ 105.5 degrees E.L. (China-licensed)
 - 56) AES2 to INTELSAT 907 (S2411) @ 27.5 degrees W.L. (U.S.-licensed)
 - 57) AES2 to INTELSAT 29e (S2913) @ 50.0 degrees W.L. (U.S.-licensed)
 - 58) AES2 to INTELSAT 20 (S2847) @ 68.5 degrees E.L. (U.S.-licensed)
 - 59) AES2 to AMC 21 (S2676) @ 124.9 degrees W.L. (United Kingdom-licensed)
 - 60) AES2 to INTELSAT 33e (S2939) @ 60.0 degrees E.L. (U.S.-licensed)
 - 61) AES2 to ASTRA 4A @ 4.8 degrees E.L. (Sweden Licensed)
 - 62) AES2 to TELSTAR 12V (S2933) @ 15 degrees W.L. (U.S.-licensed)
 - 63) AES2 to GALAXY 28 (S2160) @ 89 degrees W.L. (U.S.-licensed)
 - 64) AES2 to SES-3 (S2892) @ 103 degrees W.L. (U.S.-licensed)
 - 65) AES2 to AMC-6 (S2347) @ 83degrees W.L. (U.S.-licensed)
 - 66) AES2 to ARSAT-2 (S2956) @ 81.0 degrees W.L. (Argentina-licensed)
 - 67) AES2 to SES-10 (S2950) @ 66.9 degrees W.L. (U.S.-licensed)
 - 68) AES2 to AMC-4 (S2135)@ 134.9 degrees W.L. (U.S.-licensed)
 - 69) AES2 to OPTUS D2(M221170) @ 152 E.L. (Australia Licensed)
 - 70) AES2 to AMC-6 (S2347) @ 83degrees W.L. (U.S.-licensed)
 - 71) AES2 to SES-15 (S2951) @ 129.15 degrees W.L. (United Kingdom-licensed)



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E) Antenna Facilities

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
AES1	AES1	1000	0.24	AeroSat	HR6400	0	0 AGL/ 0 AMSL	
Max Gains(s): 29.0 dBi @ 14.4700 GHz 31.8 dBi @ 11.7000 GHz								
Maximum total input power at antenna flange (Watts) =					35.48			
Maximum aggregate output EIRP for all carriers (dBW) =					44.50			
AES2	AES2	1000	0.74	THINKOM	2KUANTENNA			
Max Gains(s): 36.7 dBi @ 14.2500 GHz 35.0 dBi @ 11.8500 GHz								
Maximum total input power at antenna flange (Watts) =					26.80			
Maximum aggregate output EIRP for all carriers (dBW) =					51.00			

F) Remote Control Point:

AES1	Systems Operation Center, 111 N CANAL STREET CHICAGO, COOK, IL 60606 8669434662	Call Sign: N/A
AES2	Systems Operation Center, 111 N CANAL STREET CHICAGO, COOK, IL 60606 8669434662	Call Sign: N/A

G) Antenna Structure marking and lighting requirements:

None unless otherwise specified under Special and General Provisions

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 4 --- Licensee must ensure that a current listing of the name, title, mailing address, email address, and telephone number of the responsible point of contact are on file at the FCC. Any changes must be filed electronically in the International Bureau Filing System (IBFS) in the "Other Filings" tab within 10 days of the change.
- 5 --- Licensee must notify the Commission when this earth station is no longer operational or when it has not been used to provide any service during any 6-month operation.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90062 --- Operation pursuant to this authorization outside the United States in the 14.0-14.5 GHz band must be in compliance with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band.
- 90066 --- Stations authorized herein must not be used to provide air traffic control communications.
- 90067 --- Operation in the territory or airspace of any country other than the United States must be in compliance with the applicable laws, regulations, and licensing procedures of that country, as well as with the conditions of this authorization.
- 90073 --- Reception of downlink transmissions in the 11.95-12.2 GHz frequency band from Intelsat 14 (Call Sign S2785) at 45° W.L. is not permitted by this authorization. Intelsat 14's authorization does not include those frequencies. (IBFS File No. SAT-RPL-20090123-00007).
- 90075 --- Licensee is afforded 30 days from the date of release of this grant and authorization to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.
- 90079 --- Antenna elevation for all operations must be at least 5 degrees above the geographic horizon while the aircraft is on the ground.
- 90104 --- For any new antenna authorized by this grant, the licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, Site ID, date of the license and certification that the antenna model was put into operation.
- 90105 --- Authority is granted to operate this station by remote control provided that the operator is responsible for ensuring the operations are in accordance with the terms and conditions of the license and pursuant to Section 25.271 of the Commission's rules. 47 C.F.R 25.271.
- 90116 --- The licensee must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein. The licensee shall have available, at all times, the technical personnel necessary to perform supervision of remote station operations.
- 90118 --- The licensee shall comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.
- 90122 --- The earth stations in this blanket license are operated by remote control. The remote control point is a material term of the license and may not be changed without prior authorization under Section 25.117 of the Commission's rules. Public Notice "The International Bureau Provides Guidance Concerning the Relocation of Earth Station Remote Control Points," DA 06-978 (rel. May 4, 2006).
- 90123 --- Operations authorized pursuant to this license are operations by U.S.-registered aircraft anywhere within the coverage area/frequency bands identified in the application for the satellites listed as points of communication. Operations authorized pursuant to this license also include operations by non-U.S.-registered aircraft within U.S. territory, including territorial waters. Authorization for operations by U.S.-registered aircraft outside U.S. territory, pursuant to this license, does not constitute a grant of access to the market in the United States under the Commission's DISCO II policies.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90246 --- ESAs authorized herein must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.
- 90247 --- ESAs authorized herein must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each ESA to determine if it is malfunctioning, and each ESA must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed-satellite service network.
- 90259 --- For purposes of this authorization, the term earth stations aboard aircraft, or ESA, is used to refer to any earth station on aircraft communicating with Fixed-Satellite Service (FSS) geostationary-orbit (GSO) space stations, without reference to the technical and licensing rules specifically adopted for earth stations on aircraft in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz, and 14.0-14.5 GHz frequency bands. See 47 C.F.R. § 25.227; Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.34-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands, IB Docket No. 12-376, Notice of Proposed Rulemaking and Report and Order, FCC 12-161, 27 FCC Rcd 16510 (2012); Revisions of Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands, IB Docket No. 12-376, Second Report and Order on Reconsideration, FCC 14-45, 29 FCC Rcd 4226 (2014). Nothing in this authorization extends those technical and licensing rules to earth stations on aircraft not operating in those specified frequency bands.
- 90269 --- Communications between the ESAs and the SES-10 space station must be in compliance with all existing and future space station coordination agreements reached between Colombia and other Administrations.
- 90270 --- Communications between the ESAs and the Optus D2 space station must be in compliance with all existing and future space station coordination agreements reached between Australia and other Administrations.
- 90271 --- AC BidCo's request for waiver of the U.S. Table of Allocations, Section 2.106 of the Commission's Rules, to receive transmissions from the Optus D2 space station in the 12.25-12.75 GHz frequency band, is dismissed as unnecessary because downlink reception from the Optus D2 would not be over the U.S., its territories and territorial waters. When operating in international airspace within line-of-sight of the territory of a foreign administration, an ESA must operate in conformance with the spectrum allocations of that administration. Operations are not authorized in these bands over the U.S., its territories and territorial waters.
- 90303 --- AeroSat HR6400, antenna ID AES1, is limited to the maximum input power spectral density of -15.45 dBW/4kHz, with worst case skew angle of -52 ° and elevation angle of 5°.
- 90304 --- Operation pursuant to this authorization must be in compliance with the terms of the licensee's coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration pertaining to operation of ESAs in the Ku-Band.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90305 --- When operating in international airspace within line-of-sight of the territory of a foreign administration where Fixed Service networks have a primary allocation in the 14.0-14.5 GHz band, an ESAA must not produce ground-level power flux density (pfd) in such territory in excess of the following values unless the foreign administration has imposed other conditions for protecting its FS stations: $-132 + 0.5 \times \text{THETA}$ dB(W/(m² MHz)) for $\text{THETA} \leq 40^\circ$; -112 dB(W/(m² MHz)) for $40^\circ < \text{THETA} \leq 90^\circ$. Where: THETA is the angle of arrival of the radio-frequency wave in degrees above the horizontal, and the aforementioned limits relate to the pfd and angles of arrival that would be obtained under free space propagation conditions.
- 90308 --- The ESAAs are authorized to receive downlink transmissions in the 11.7-12.2 GHz frequency band from the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Reception is authorized on a primary basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No.12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.
- 90309 --- The ESAAs are authorized to receive downlink transmissions in the 10.95-11.2 GHz and 11.45-11.7 GHz frequency band from the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Reception is authorized on an unprotected basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No.12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.
- 90310 --- For each ESAA transmitter, the licensee shall maintain records of the following data for each operating ESAA, a record of the aircraft location (i.e., latitude/longitude/altitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and maintained for a period of not less than one year. Records shall be recorded at time intervals no greater than one (1) minute while the ESAA is transmitting. The ESAA operator shall make this data available, in the form of a comma delimited electronic spreadsheet, within 24 hours of a request from the Commission, NTIA, or a frequency coordinator for purposes of resolving harmful interference events. A description of the units (i.e., degrees, minutes, MHz ...) in which the records values are recorded will be supplied along with the records.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90311 --- The ESAAs are authorized to transmit in the 14.0-14.5 GHz frequency band to the geostationary orbit space stations listed as a point of communication in Section D above subject to the particulars of operation and identified frequencies included in Section B above and the licensee's application. Such transmissions are authorized on a primary basis as an application of the Fixed-Satellite Service pursuant to the allocation determinations and service rules in IB Docket No. 12-376 (Docket Name: Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands). Operations must be in accordance with the Federal Communications Commission's rules not waived herein, the technical specifications contained in licensee's application, and are subject to the other conditions listed in the authorization.
- 90321 --- The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 CFR § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. Yamal 300K is an ISS Reshetnev Ekspress-1000NTA spacecraft that was launched on November 2, 2012. Applicant states that Yamal 300K has one tank, with a volume of 40 liters, containing nitrogen and hydrazine separated by an internal membrane. At satellite end of life the tank will retain 132.5 grams of nitrogen in a total tank volume of 39.3 liters. We grant a waiver of Section 25.283(c) with respect to this de minimis inert gas. The applicant also states that hydrazine will be depleted at end of life, with an estimated residual mass of 700 grams of hydrazine in a total tank volume of 0.7 liters. The applicant also states that, at end of life, two identical interconnected tanks will retain 1.08 kilograms of xenon in a total volume of 76 liters. We find that the measures described in the application for depletion of hydrazine and xenon are appropriate.
- 90322 --- The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 CFR § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. Yamal 401 is an ISS Reshetnev Ekspress-2000A spacecraft that was launched on December 15, 2014. Applicant states that Yamal 401 has three tanks, each with a volume of 40 liters, and each containing nitrogen and hydrazine separated by an internal membrane. At satellite end of life the tanks will retain a total of 397.5 grams of nitrogen in total tank volume of 117.9 liters. We grant a waiver of Section 25.283(c) with respect to this de minimis inert gas. The applicant also states that hydrazine will be depleted at end of life, with an estimated residual mass in each tank of 700 grams remaining in 0.7 liters. The applicant also states that, at end of life, four identical interconnected tanks will retain 2.16 kilograms of xenon in a total volume of 152 liters, corresponding to the minimum operating pressure of the plasma thrusters. We find that the measures described in the application for depletion of hydrazine and xenon are appropriate.
- 90341 --- The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 C.F.R. § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. JCSAT-2B is a Space Systems/Loral 1300 model spacecraft that was launched on May 6, 2016. Applicant states that JCSAT-2B's two identical interconnected helium tanks will be vented as a part of the retirement procedures for this spacecraft, but a pressure regulator will prevent complete expulsion of the helium in the tanks by cutting off the flow of helium after the 400 psia minimum inlet pressure of the regulator is reached. Applicant states that the helium tanks will retain a total mass of approximately 440 grams of helium at end of life, with each tank volume being 49 liters. We grant a waiver of the Section 25.283(c) with respect this de minimis inert gas.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90342 --- The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 C.F.R. § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. AsiaSat 7 is a Space Systems/Loral 1300 model spacecraft that was launched on November 26, 2011. Applicant states that AsiaSat 7's two identical interconnected helium tanks will be vented as a part of the retirement procedures for this spacecraft, but a pressure regulator will prevent complete expulsion of the helium in the tanks by cutting off the flow of helium after the 400 psia minimum inlet pressure of the regulator is reached. Applicant states that the helium tanks will retain a total mass of approximately 440 grams of helium at end of life, with each tank volume being 49 liters. We grant a waiver of the Section 25.283(c) with respect this de minimis inert gas.
- 90343 --- This grant does not authorize communications between the JCSAT-2B space station and the gateway earth station located in Kapolei, Hawaii (Call Sign E010236). Those communications may not commence until the JCSAT-2B space station has been granted access to the U.S. market by modification of the gateway earth station authorization (Call Sign E010236).
- 90346 --- Applicant's request for a waiver of Section 25.210(f) of the Commission's rules is GRANTED, as conditioned. Section 25.210(f) requires that space stations operating in the Fixed-Satellite Service in certain frequency bands, including 10.7-12.7 GHz and 13.75-14.5 GHz bands, employ full frequency reuse. 47 C.F.R. § 25.210(f). This requirement is part of the Commission's two-degree spacing policy, and the purpose is to ensure that scarce orbit and spectrum resources are used efficiently and to encourage the deployment of technologically innovative satellites. The Commission has waived this requirement where doing so would allow satellite capacity that would otherwise lay dormant to be used to provide service. Yamal 300K is in-orbit and will operate from the 177° W.L. orbital location regardless of whether we permit it to provide service in the United States. Yamal 300K is capable of full-frequency use on some, but not all, of the frequency bands requested for operations with the United States. We find that preventing Yamal 300K from offering its capacity in the United States would preclude the provision of Ku-band service in the U.S. from this orbit location, and it is in the public interest to grant a limited waiver of the full frequency reuse requirement for the 10.95-11.2 GHz and 14.0-14.25 GHz frequency bands. Limited waiver is granted subject to the condition that no compliant satellite is offering service to the United States in the 10.95-11.2 GHz and 14.0-14.25 GHz frequencies at that orbital location.
- 90347 --- The Schedule S and other technical information for the Yamal 300K space station in IBFS File No. SES-MFS-20150609-00349, as amended by SES-AFS-20160107-00003, are incorporated by reference into this authorization.
- 90398 --- Changes to previously authorized transmitting facilities, operations and devices regulated by the Commission that may have significant environmental impact, and are not excluded by §1.1306, require the preparation of an Environmental Assessment (EA) by the licensee. (See 47 C.F.R. §§1.1307, 1.1308 and 1.1311)
- 90399 --- The licensee shall, at all times, take all necessary measures to ensure that operation of this (these) authorized earth station(s) does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310. Physical measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling, or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.



UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
RADIO STATION AUTHORIZATION

Name: AC BidCo LLC

Call Sign: E120106

Authorization Type: Modification of License

File Number: SES-MFS-20171220-01351

Non Common Carrier

Grant date: 03/09/2018

Expiration Date: 05/01/2028

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90436 --- Communications between the ESAAs and the ARSAT-2 space station must be in compliance with all existing and future space station coordination agreements reached between Argentina and other Administrations.
- 90457 --- Waiver of the Table of Frequency Allocation, Section 2.106 of the Commission's rules, 47 C.F.R. § 2.106, to permit ESAA operations with the Eutelsat 172B satellite (Call Sign S3021) in the 12.2-12.75 GHz spectrum outside the United States is granted on a unprotected basis. Operations must comply with conditions set forth in grant of IBFS File No. SAT-RPL-20170927-00136.
- 90458 --- Waiver of the Table of Frequency Allocation, Section 2.106 and Footnote NG52 of the Commission's rules, 47 C.F.R. § 2.106, Footnote NG52, to permit ESAA operations with the SES-15 satellite (Call Sign S2951) in the 10.7-10.95 GHz and 11.2-11.45 GHz bands for ESAA operations, including for terminals in U.S. airspace, is granted on an unprotected basis. Operations in these bands must comply with the conditions set forth in IBFS File No. SAT-MPL-20170914-00130.
- 900387 --- Waiver of the Table of Frequency Allocation, Section 2.106 of the Commission's rules, 47 C.F.R. § 2.106, is granted for space-to-Earth operations, on an unprotected, non-interference basis, in the 12.25-12.75 GHz frequency band from Intelsat 19 in ITU Region 2, including portions of U.S. airspace. Reception of downlink transmissions by the ESAAs pursuant to grant of the licensee's waiver request is limited to the antenna beam patterns provided in IBFS File No. SAT-MOD-20120628-00107.
- 900388 --- Communications between the ESAAs and the Eutelsat 115 West B and Eutelsat 117 West A space stations must be in compliance with all existing and future space station coordination agreements reached between Mexico and other Administrations.
- 900389 --- Reception of downlink transmissions is on a non-interference, non-protected basis from the following geostationary orbit space stations: Intelsat 29e (Call Sign S2913) at 50.0° W.L. in the 11.2-11.45 GHz frequency band; SES-4 (Call Sign S2828) at 22° W.L., Telstar 11N (Call Sign S2357) at 37.55° W.L., Yamal 300K at 183° E.L., Yamal 401 at 90° E.L., and Intelsat 20 (Call Sign S2847) at 68.5° E.L. in the 12.5-12.75 GHz frequency band; Intelsat 33e (Call Sign S2939) at 60.0° E.L. in the 12.5-12.6 GHz frequency band; Intelsat 19 (Call Sign S2850) at 166° E.L., Intelsat 18 (Call Sign S2817) at 180° E.L., JCSAT-2B at 154° E.L., JCSAT-5A at 132° E.L., and AsiaSat 7 at 105.5° E.L. in the 12.25-12.75 GHz frequency band; Intelsat 22 (Call Sign S2846) at 72.1° E.L. in the 12.25-12.5 GHz frequency band; and Eutelsat 172A (formerly GE-23) (Call Sign S2610) at 172.0° E.L., Apstar 5 at 138.0° E.L. and ASTRA 4A at 4.8° E.L. in the 12.2-12.75 GHz frequency band. When receiving transmissions from these satellites in these frequency bands, the aircraft earth station operations authorized herein must accept interference from any radio station operating in conformance with the U.S. Table of Frequency Allocations.
- 900391 --- Communications between the ESAAs and the Apstar 5 and AsiaSat 7 space stations must be in compliance with all existing and future space station coordination agreements reached between China and other Administrations.
- 900392 --- Communications between the ESAAs and the JCSAT-2B and JCSAT-5A space stations must be in compliance with all existing and future space station coordination agreements reached between Japan and other Administrations.
- 900393 --- Communications between the ESAAs and the Yamal 300K and Yamal 401 space stations must be in compliance with all existing and future space station coordination agreements reached between Russia and other Administrations.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 900394 --- Communications between the ESAAs and the ASTRA 4A space station must be in compliance with all existing and future space station coordination agreements reached between Sweden and other Administrations.
- 900395 --- Communications between the ESAAs and the AMC-21 space station must be in compliance with all existing and future space station coordination agreements reached between the United Kingdom (Gibraltar) and other Administrations.
- 900396 --- Communications between the ESAAs and the SES-4 and SES-6 space stations must be in compliance with all existing and future space station coordination agreements reached between the Netherlands and other Administrations.
- 900397 --- Waiver of the Table of Frequency Allocation, Section 2.106 and Footnote NG52 of the Commission's rules, 47 C.F.R. § 2.106, NG52, is granted for space-to-Earth ESAA operations, on an unprotected, non-interference basis, in the 11.2-11.45 GHz frequency band from Intelsat 29e in ITU Region 2, including U.S. airspace. Operations in this band are authorized based upon and subject to the conditions, waivers, and findings specified for Call Sign S2913. See IBFS File Nos. SAT-MOD-20130722-00097 and SAT-AMD-20140718-00087.
- 900398 --- The applicant's request for a waiver of Section 25.283(c) of the Commission's rules, 47 CFR § 25.283(c), is granted. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. ASTRA 4A is a Lockheed-Martin A2100 spacecraft that was launched on November 18, 2007. Applicant states that shortly following orbital insertion, the oxidizer tanks were permanently sealed by firing a pyrotechnic valve. Applicant states that there are 12 kilograms of oxidizer in two interconnected tanks with a total tank volume of 657 liters, and 1.9 kilograms of helium pressurant in the same 657-liter tank volume. This waiver is granted because modification of the spacecraft would present a undue hardship, since compliance with Section 25.283(c) is not achievable except through direct retrieval of spacecraft. In making this determination, we note that the information submitted is not sufficient to support a finding that the underlying purpose of Section 25.283(c) would be served.



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B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station is not ready for operation by the required date of completion of construction unless an application for modification of authorization to request additional time to complete construction is filed by that date, together with a showing that failure to complete construction by the required date was due to factors not under control of the grantee.

Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulatees is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993." These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.