



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
RADIO STATION AUTHORIZATION**

Name: Telesat Network Services, Inc.

Call Sign: KA399

Authorization Type: Modification of License

File Number: SES-MFS-20150922-00604

Non Common Carrier

Grant date: 12/16/2015

Expiration Date: 12/30/2018



Nature of Service: Earth Stations on-board Vessels

Nature of Service: Fixed Satellite Service

Class of Station: Fixed Earth Stations

**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
1)	1	1305 INDUSTRIAL PARK ROAD MOUNT JACKSON, SHENANDOAH, VA 22842	38°43'42.0"N	78°39'25.0"W	295.9	27

Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209

*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 December 30, 2003 (3 AM Eastern Standard Time) and ending December 30, 2018 (3 AM Eastern Standard Time) . The required date of completion of construction and commencement of operation is December 16, 2016 (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	200KG7W	Tx	49.50	32.50	1.8M.		
2)	14000.0000-14500.0000	H,V	320KG7W	Tx	49.50	30.50	1.8M.		
3)	14000.0000-14500.0000	H,V	640KG7W	Tx	49.50	27.50	1.8M.		
4)	11700.0000-12200.0000	H,V	200KG7W	Rx			1.8M.		
5)	11700.0000-12200.0000	H,V	320KG7W	Rx			1.8M.		
6)	11700.0000-12200.0000	H,V	640KG7W	Rx			1.8M.		
7)	14001.0000-14499.0000	L,R	960KF2D	Tx	93.10	70.00	15M.		TT&C
8)	14000.5000-14499.5000	H,V	960KF2D	Tx	93.10	70.00	15M.		TT&C
9)	14000.0000-14500.0000	L,R	100HN0N	Tx	64.50	50.50	15M.		



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10)	14000.0000-14500.0000	L,R	17M5F3F	Tx	79.30	52.30	15M.		
11)	14000.0000-14500.0000	L,R	1M80G1D	Tx	61.30	34.80	15M.		
12)	14000.0000-14500.0000	L,R	1M80G1E	Tx	61.30	34.80	15M.		
13)	14000.0000-14500.0000	L,R	1M80G1F	Tx	61.30	34.80	15M.		
14)	14000.0000-14500.0000	L,R	2M70G1C	Tx	78.80	50.50	15M.		
15)	14000.0000-14500.0000	L,R	2M70G1D	Tx	78.80	50.50	15M.		
16)	14000.0000-14500.0000	L,R	2M70G1E	Tx	78.80	50.50	15M.		
17)	14000.0000-14500.0000	L,R	36M0F3F	Tx	70.80	43.80	15M.		
18)	14000.0000-14500.0000	L,R	41M1G1C	Tx	90.60	50.50	15M.		
19)	14000.0000-14500.0000	L,R	41M1G1D	Tx	90.60	50.50	15M.		
20)	14000.0000-14500.0000	L,R	41M1G1E	Tx	90.60	50.50	15M.		
21)	14000.0000-14500.0000	L,R	41M1G1F	Tx	90.60	50.50	15M.		
22)	14000.0000-14500.0000	L,R	49K0G1D	Tx	45.70	34.80	15M.		
23)	14000.0000-14500.0000	L,R	49K0G1E	Tx	45.70	34.80	15M.		
24)	14000.0000-14500.0000	L,R	49K0G1F	Tx	45.70	34.80	15M.		
25)	14000.0000-14500.0000	L,R	54M0G1C	Tx	91.80	50.50	15M.		
26)	14000.0000-14500.0000	L,R	54M0G1D	Tx	91.80	50.50	15M.		
27)	14000.0000-14500.0000	L,R	54M0G1E	Tx	91.80	50.50	15M.		
28)	14000.0000-14500.0000	L,R	7M03G1F	Tx	67.30	34.80	15M.		
29)	14000.0000-14500.0000	L,R	7M04G1D	Tx	67.30	34.80	15M.		
30)	14000.0000-14500.0000	L,R	7M04G1E	Tx	67.30	34.80	15M.		
31)	14000.0000-14500.0000	L,R	36M0G7W	Tx	73.40	47.84	15M.		DIGITAL, VIDEO, DATA AND VOICE
32)	14000.0000-14500.0000	L,R	36M0G7W	Tx	86.10	60.54	15M.		DIGITAL, VIDEO, DATA AND VOICE



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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
33)	13810.0000-14000.0000	L,R	54M0G7W	Tx	85.00	43.70	15M.		DIGITAL, VIDEO, DATA AND VOICE
34)	11705.5000-12199.0000	L,R	850KF2D	Rx			15M.		TT&C
35)	11700.0000-12200.0000	L,R		Rx			15M.		
36)	11700.0000-12200.0000	H,V	500KG7W	Rx			15M.		540 Kbps, 66 FEC, QPSK
37)	11451.0000-11451.0000	L,R	850KF2D	Rx			15M.		ORION
38)	11450.5000-11450.5000	L,R	850KF2D	Rx			15M.		ORION
39)	11450.0000-11950.0000	L,R		Rx			15M.		INTELSAT
40)	10950.0000-11700.0000	L,R	54M0G7W	Rx			15M.		(WTO-COVERED SERVICES ONLY)
41)	10950.0000-11200.0000	L,R		Rx			15M.		INTELSAT
42)	14000.0000-14500.0000	H,V	1M28G7W	Tx	58.20	33.10	2.4M.		
43)	14000.0000-14500.0000	H,V	2M56G7W	Tx	58.20	30.10	2.4M.		
44)	14000.0000-14500.0000	H,V	800KG7W	Tx	58.20	35.20	2.4M.		
45)	11700.0000-12200.0000	H,V	2M56G7W	Rx			2.4M.		
46)	11700.0000-12200.0000	H,V	800KG7W	Rx			2.4M.		
47)	11700.0000-12200.0000	H,V	1M28G7W	Rx			2.4M.		ORION, PAS
48)	14200.0000-14470.0000	H,V	943KG7W	Tx	38.10	14.40	2406 ESV		1037 Kbps, QPSK, 33/50 FEC
49)	14000.0000-14500.0000	H,V	943KG7W	Tx	38.10	14.40	2406 ESV		1037 Kbps, QPSK, 33/50 FEC
50)	12500.0000-12750.0000	H,V	943KG7W	Rx			2406 ESV		NULL
51)	11700.0000-12200.0000	H,V	943KG7W	Rx			2406 ESV		NULL
52)	11450.0000-11700.0000	H,V	943KG7W	Rx			2406 ESV		NULL
53)	10950.0000-11200.0000	H,V	943KG7W	Rx			2406 ESV		NULL
54)	12500.0000-12750.0000	H,V	1M76G7W	Rx			4003A ESV		1560 KBPS, .533 FEC, QPSK
55)	12500.0000-12750.0000	H,V	3M52G7W	Rx			4003A ESV		1560 KBPS, .533 FEC, BPSK



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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
56)	12500.0000-12750.0000	H, V	5M77G7W	Rx			4003A ESV	2560 KBPS, .533 FEC,	BPSK
57)	11700.0000-12200.0000	H, V	1M76G7W	Rx			4003A ESV	1560 Kbps, .533 FEC,	QPSK
58)	11700.0000-12200.0000	H, V	3M52G7W	Rx			4003A ESV	1560 Kbps, .533 FEC,	BPSK
59)	11700.0000-12200.0000	H, V	5M77G7W	Rx			4003A ESV	2560 Kbps, .533 FEC,	BPSK
60)	11450.0000-11700.0000	H, V	1M76G7W	Rx			4003A ESV	1560 Kbps, .533 FEC,	QPSK
61)	11450.0000-11700.0000	H, V	3M52G7W	Rx			4003A ESV	1560 Kbps, .533 FEC,	BPSK
62)	11450.0000-11700.0000	H, V	5M77G7W	Rx			4003A ESV	2560 Kbps, .533 FEC,	BPSK
63)	10950.0000-11200.0000	H, V	1M76G7W	Rx			4003A ESV	1560 Kbps, .533 FEC,	QPSK
64)	10950.0000-11200.0000	H, V	3M52G7W	Rx			4003A ESV	1560 Kbps, .533 FEC,	BPSK
65)	10950.0000-11200.0000	H, V	5M77G7W	Rx			4003A ESV	2560 Kbps, .533 FEC,	BPSK
66)	14000.0000-14500.0000	H, V	500KG7W	Tx	46.50	25.50	4006 ESV	540 Kbps, .66 FEC,	QPSK
67)	14000.0000-14500.0000	H, V	1M60G7W	Tx	50.30	24.30	4006 ESV	1750 Kbps, .66 FEC,	QPSK
68)	14000.0000-14500.0000	H, V	400KG7W	Tx	45.50	25.50	4006 ESV	350 Kbps, .533 FEC,	QPSK
69)	14000.0000-14500.0000	H, V	470KG7W	Tx	46.20	25.50	4006 ESV	410 Kbps, .533 FEC,	QPSK
70)	12500.0000-12750.0000	H, V	1M76G7W	Rx			4006 ESV	1560 KBPS, .533 FEC,	QPSK
71)	12500.0000-12750.0000	H, V	3M52G7W	Rx			4006 ESV	1560 KBPS, .533 FEC,	BPSK
72)	12500.0000-12750.0000	H, V	5M77G7W	Rx			4006 ESV	2560 KBPS, .533 FEC,	BPSK
73)	11700.0000-12200.0000	H, V	1M76G7W	Rx			4006 ESV	1560 Kbps, .533 FEC,	QPSK
74)	11700.0000-12200.0000	H, V	5M77G7W	Rx			4006 ESV	2560 Kbps, .533 FEC,	BPSK
75)	11450.0000-11700.0000	H, V	1M76G7W	Rx			4006 ESV	1560 Kbps, .533 FEC,	QPSK
76)	11450.0000-11700.0000	H, V	3M52G7W	Rx			4006 ESV	1560 Kbps, .533 FEC,	BPSK
77)	11450.0000-11700.0000	H, V	5M77G7W	Rx			4006 ESV	2560 Kbps, .533 FEC,	BPSK
78)	10950.0000-11200.0000	H, V	1M76G7W	Rx			4006 ESV	1560 Kbps, .533 FEC,	QPSK
79)	10950.0000-11200.0000	H, V	3M52G7W	Rx			4006 ESV	1560 Kbps, .533 FEC,	BPSK



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 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
80)	10950.0000-11200.0000	H, V	5M77G7W	Rx			4006 ESV		2560 Kbps, .533 FEC, BPSK
81)	14200.0000-14470.0000	H, V	400KG7W	Tx	45.50	25.50	4009 ESV		350KBPS, .533 FEC, QPSK
82)	14200.0000-14470.0000	H, V	500KG7W	Tx	46.50	25.50	4009 ESV		540 KBPS, .66 FEC, QPSK
83)	14200.0000-14470.0000	H, V	470KG7W	Tx	46.20	25.50	4009 ESV		410 KBPS, .533 FEC, QPSK
84)	14200.0000-14470.0000	H, V	1M60G7W	Tx	50.30	24.30	4009 ESV		1750 KBPS, .66 FEC, QPSK
85)	12500.0000-12750.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
86)	12500.0000-12750.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
87)	12500.0000-12750.0000	H, V	5M77G7W	Rx			4009 ESV		NULL
88)	11700.0000-12200.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
89)	11700.0000-12200.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
90)	11700.0000-12200.0000	H, V	5M77G7W	Rx			4009 ESV		NULL
91)	11450.0000-11700.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
92)	11450.0000-11700.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
93)	11450.0000-11700.0000	H, V	5M77G7W	Rx			4009 ESV		NULL
94)	10950.0000-11200.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
95)	10950.0000-11200.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
96)	10950.0000-11200.0000	H, V	5M77G7W	Rx			4009 ESV		NULL
97)	14000.0000-14500.0000	H, V	943KG7W	Tx	47.30	23.60	4012GX4W		1037 KBPS, QPSK, 33/50 FEC
98)	12500.0000-12750.0000	H, V	943KG7W	Rx			4012GX4W		NULL
99)	11700.0000-12200.0000	H, V	943KG7W	Rx			4012GX4W		NULL
100)	11450.0000-11700.0000	H, V	943KG7W	Rx			4012GX4W		NULL
101)	10950.0000-11200.0000	H, V	943KG7W	Rx			4012GX4W		NULL
102)	14000.0000-14500.0000	H, V	943KG7W	Tx	50.30	26.60	4012GX8W		1037 KBPS, QPSK, 33/50 FEC
103)	12500.0000-12750.0000	H, V	943KG7W	Rx			4012GX8W		NULL



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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
104)	11700.0000-12200.0000	H, V	943KG7W	Rx			4012GX8W		NULL
105)	11450.0000-11700.0000	H, V	943KG7W	Rx			4012GX8W		NULL
106)	10950.0000-11200.0000	H, V	943KG7W	Rx			4012GX8W		NULL
107)	14200.0000-14470.0000	H, V	943KG7W	Tx	52.00	28.40	6006 ESV		1037 Kbps, QPSK, 33/50 FEC
108)	14000.0000-14500.0000	H, V	943KG7W	Tx	52.00	28.40	6006 ESV		1037 Kbps, QPSK, 33/50 FEC
109)	12500.0000-12750.0000	H, V	943KG7W	Rx			6006 ESV		NULL
110)	11700.0000-12200.0000	H, V	943KG7W	Rx			6006 ESV		NULL
111)	11450.0000-11700.0000	H, V	943KG7W	Rx			6006 ESV		NULL
112)	10950.0000-11200.0000	H, V	943KG7W	Rx			6006 ESV		NULL
113)	14200.0000-14470.0000	H, V	943KG7W	Tx	52.00	28.40	6009 ESV		1037 KBPS, QPSK, 33/50 FEC
114)	12500.0000-12750.0000	H, V	943KG7W	Rx			6009 ESV		NULL
115)	11700.0000-12200.0000	H, V	943KG7W	Rx			6009 ESV		NULL
116)	11450.0000-11700.0000	H, V	943KG7W	Rx			6009 ESV		NULL
117)	10950.0000-11200.0000	H, V	943KG7W	Rx			6009 ESV		NULL
118)	14200.0000-14470.0000	H, V	943KG7W	Tx	52.00	28.40	6012 ESV		1037 KBPS, QPSK, 33/50 FEC
119)	12500.0000-12750.0000	H, V	943KG7W	Rx			6012 ESV		NULL
120)	11700.0000-12200.0000	H, V	943KG7W	Rx			6012 ESV		NULL
121)	11450.0000-11700.0000	H, V	943KG7W	Rx			6012 ESV		NULL
122)	10950.0000-11200.0000	H, V	943KG7W	Rx			6012 ESV		NULL
123)	14200.0000-14470.0000	H, V	943KG7W	Tx	57.50	33.80	9797 ESV		1037 KBPS, QPSK, 33/50 FEC
124)	12500.0000-12750.0000	H, V	943KG7W	Rx			9797 ESV		NULL
125)	11700.0000-12200.0000	R	943KG7W	Rx			9797 ESV		NULL
126)	11450.0000-11700.0000	H, V	943KG7W	Rx			9797 ESV		NULL
127)	14498.0000-14500.0000	H, V	850KF2D	Tx	69.70	46.40	LMA4T11N		



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128)	14000.0000-14500.0000	H, V	100HN0N	Tx	85.50	46.40	LMA4T11N		
129)	14000.0000-14500.0000	H, V	17M5F3F	Tx	79.30	52.30	LMA4T11N		
130)	14000.0000-14500.0000	H, V	1M80G1D	Tx	61.30	34.80	LMA4T11N		
131)	14000.0000-14500.0000	H, V	1M80G1E	Tx	61.30	34.80	LMA4T11N		
132)	14000.0000-14500.0000	H, V	1M80G1F	Tx	61.30	34.80	LMA4T11N		
133)	14000.0000-14500.0000	H, V	2M70G1C	Tx	74.70	46.40	LMA4T11N		
134)	14000.0000-14500.0000	H, V	2M70G1D	Tx	74.70	46.40	LMA4T11N		
135)	14000.0000-14500.0000	H, V	2M70G1E	Tx	74.70	46.40	LMA4T11N		
136)	14000.0000-14500.0000	H, V	36M0F3F	Tx	70.80	43.80	LMA4T11N		
137)	14000.0000-14500.0000	H, V	41M1G1C	Tx	86.50	46.40	LMA4T11N		
138)	14000.0000-14500.0000	H, V	41M1G1D	Tx	86.50	46.40	LMA4T11N		
139)	14000.0000-14500.0000	H, V	41M1G1E	Tx	86.50	46.40	LMA4T11N		
140)	14000.0000-14500.0000	H, V	41M1G1F	Tx	86.50	46.40	LMA4T11N		
141)	14000.0000-14500.0000	H, V	49K0G1D	Tx	45.70	34.80	LMA4T11N		
142)	14000.0000-14500.0000	H, V	49K0G1E	Tx	45.70	34.80	LMA4T11N		
143)	14000.0000-14500.0000	H, V	49K0G1F	Tx	45.70	34.80	LMA4T11N		
144)	14000.0000-14500.0000	H, V	7M04G1D	Tx	67.30	34.80	LMA4T11N		
145)	14000.0000-14500.0000	H, V	7M04G1E	Tx	67.30	34.80	LMA4T11N		
146)	14000.0000-14500.0000	H, V	7M04G1F	Tx	67.30	34.80	LMA4T11N		
147)	14000.0000-14500.0000	H, V	1M76G7W	Tx	69.00	42.50	LMA4T11N	1560 Kbps, .533 FEC, QPSK	
148)	14000.0000-14500.0000	H, V	3M52G7W	Tx	69.00	39.50	LMA4T11N	2560 Kbps, .533 FEC, BPSK	
149)	14000.0000-14500.0000	H, V	5M77G7W	Tx	69.00	37.40	LMA4T11N	2560 Kbps, .533 FEC, BPSK	
150)	13810.0000-14000.0000	H, V	1M76G7W	Tx	69.00	42.50	LMA4T11N	1560 Kbps, .533 FEC, QPSK	
151)	13810.0000-14000.0000	H, V	3M52G7W	Tx	69.00	39.50	LMA4T11N	1560 Kbps, .533 FEC, QPSK	



UNITED STATES OF AMERICA  
**FEDERAL COMMUNICATIONS COMMISSION**  


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**RADIO STATION AUTHORIZATION**

Name: Telesat Network Services, Inc.

Call Sign: KA399

Authorization Type: Modification of License

File Number: SES-MFS-20150922-00604

Non Common Carrier

Grant date: 12/16/2015

Expiration Date: 12/30/2018

**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
152)	13810.0000-14000.0000	H, V	5M77G7W	Tx	69.00	37.40	LMA4T11N		2560 Kbps, .533 FEC, BPSK
153)	11700.0000-12200.0000	H, V		Rx			LMA4T11N		
154)	11700.0000-12200.0000	H, V	400KG7W	Rx			LMA4T11N		350 Kbps, 533 FEC, QPSK
155)	11700.0000-12200.0000	H, V	470KG7W	Rx			LMA4T11N		410 Kbps, 533 FEC, QPSK
156)	11700.0000-12200.0000	H, V	1M60G7W	Rx			LMA4T11N		1750 Kbps, 66 FEC, QPSK
157)	11451.0000-11451.0000	H, V	850KF2D	Rx			LMA4T11N		ORION
158)	11450.5000-11450.5000	H, V	850KF2D	Rx			LMA4T11N		ORION
159)	11450.0000-11950.0000	H, V		Rx			LMA4T11N		INTELSAT
160)	11450.0000-11700.0000	H, V	400KG7W	Rx			LMA4T11N		350 Kbps, 533 FEC, QPSK
161)	11450.0000-11700.0000	H, V	470KG7W	Rx			LMA4T11N		410 Kbps, 533 FEC, QPSK
162)	11450.0000-11700.0000	H, V	500KG7W	Rx			LMA4T11N		540 Kbps, 66 FEC, QPSK
163)	11450.0000-11700.0000	H, V	1M60G7W	Rx			LMA4T11N		1750 Kbps, 66 FEC, QPSK
164)	10950.0000-11200.0000	H, V		Rx			LMA4T11N		INTELSAT
165)	10950.0000-11200.0000	H, V	400KG7W	Rx			LMA4T11N		350 Kbps, 533 FEC, QPSK
166)	10950.0000-11200.0000	H, V	500KG7W	Rx			LMA4T11N		540 Kbps, 66 FEC, QPSK
167)	10950.0000-11200.0000	H, V	1M60G7W	Rx			LMA4T11N		1750 Kbps, .66 FEC, QPSK
168)	10950.0000-11200.0000	H, V	470KG7W	Rx			LMA4T11N		410 Kbps, 533 FEC, QPSK
169)	14200.0000-14470.0000	H, V	910KG7W	Tx	48.93	25.37	S900		QPSK
170)	12500.0000-12750.0000	H, V	910KG7W	Rx			S900		NULL
171)	11700.0000-12200.0000	H, V	910KG7W	Rx			S900		NULL
172)	11450.0000-11700.0000	H, V	910KG7W	Rx			S900		NULL
173)	14200.0000-14470.0000	H, V	907KG7W	Tx	46.10	22.55	SE125ESV		1037 KBPS, QPSK, 33/50 FEC
174)	11700.0000-12200.0000	H, V	907KG7W	Rx			SE125ESV		
175)	11450.0000-11700.0000	H, V	907KG7W	Rx			SE125ESV		





UNITED STATES OF AMERICA  
**FEDERAL COMMUNICATIONS COMMISSION**  
**RADIO STATION AUTHORIZATION**

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Non Common Carrier

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Expiration Date: 12/30/2018

**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
176)	10950.0000-11200.0000	H, V	907KG7W	Rx			SE125ESV		
177)	14200.0000-14470.0000	H, V	943KG7W	Tx	38.10	14.40	USAT 24		1037 KBPS, QPSK, 33/50 FEC
178)	12500.0000-12750.0000	H, V	943KG7W	Rx			USAT 24		NULL
179)	11700.0000-12200.0000	H, V	943KG7W	Rx			USAT 24		NULL
180)	11450.0000-11700.0000	H, V	943KG7W	Rx			USAT 24		NULL
181)	10950.0000-11200.0000	H, V	943KG7W	Rx			USAT 24		NULL
182)	14000.0000-14500.0000	H, V	943KG7W	Tx	47.30	23.60	V100GX4W		1037 KBPS, QPSK, 33/50 FEC
183)	12500.0000-12750.0000	H, V	943KG7W	Rx			V100GX4W		NULL
184)	11700.0000-12200.0000	H, V	943KG7W	Rx			V100GX4W		NULL
185)	11450.0000-11700.0000	H, V	943KG7W	Rx			V100GX4W		NULL
186)	10950.0000-11200.0000	H, V	943KG7W	Rx			V100GX4W		NULL
187)	14000.0000-14500.0000	H, V	943KG7W	Tx	50.30	26.60	V100GX8W		1037 KBPS, QPSK, 33/50 FEC
188)	12500.0000-12750.0000	H, V	943KG7W	Rx			V100GX8W		NULL
189)	11700.0000-12200.0000	H, V	943KG7W	Rx			V100GX8W		NULL
190)	11450.0000-11700.0000	H, V	943KG7W	Rx			V100GX8W		NULL
191)	10950.0000-11200.0000	H, V	943KG7W	Rx			V100GX8W		NULL
192)	14200.0000-14470.0000	H, V	970KG7W	Tx	49.30	25.50	V110ESV		QPSK, BPSK
193)	11700.0000-12200.0000	H, V	970KG7W	Rx			V110ESV		QPSK, BPSK
194)	11450.0000-11700.0000	H, V	970KG7W	Rx			V110ESV		QPSK, BPSK
195)	10950.0000-11200.0000	H, V	970KG7W	Rx			V110ESV		QPSK, BPSK
196)	14200.0000-14470.0000	H, V	717KG7W	Tx	38.30	15.80	V60GESV		QPSK, BPSK
197)	11700.0000-12200.0000	H, V	717KG7W	Rx			V60GESV		QPSK, BPSK
198)	11450.0000-11700.0000	H, V	717KG7W	Rx			V60GESV		QPSK, BPSK
199)	10950.0000-11200.0000	H, V	717KG7W	Rx			V60GESV		QPSK, BPSK



**UNITED STATES OF AMERICA**  
**FEDERAL COMMUNICATIONS COMMISSION**  


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**RADIO STATION AUTHORIZATION**

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Authorization Type: Modification of License

File Number: SES-MFS-20150922-00604

Non Common Carrier

Grant date: 12/16/2015

Expiration Date: 12/30/2018

**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	7.0W	-106.5W	05.6	-36.7	101.7	-220.2	-5.2	15M.
2)	10950.0000-11200.0000	7.0W	-106.5W	05.6	-36.7	101.7	-220.2	0	15M.
3)	11450.0000-12200.0000	7.0W	-106.5W	05.6	-36.7	101.7	-220.2	0	15M.
4)	13750.0000-14000.0000	37.5W	-37.5W	42.3	-42.3	155.9	-155.9	-18.4	15M.
5)	13750.0000-14000.0000	63.0W	-63.0W	28.4	-28.4	125.6	-125.6	-22.7	15M.
6)	14000.0000-14500.0000	37.5W	-37.5W	28.3	-28.3	125.6	-125.6	-25.2	LMA4T11N
7)	10950.0000-11200.0000	37.5W	-37.5W	28.3	-28.3	125.6	-125.6	0	LMA4T11N
8)	11450.0000-12200.0000	37.5W	-37.5W	28.3	-28.3	125.6	-125.6	0	LMA4T11N
9)	14000.0000-14500.0000	37.5W	-37.5W	28.3	-28.3	125.6	-125.6	-15.6	1.8M.
10)	11700.0000-12200.0000	37.5W	-37.5W	28.3	-28.3	125.6	-125.6	0	1.8M.
11)	14000.0000-14500.0000	37.5W	-37.5W	28.3	-28.3	125.6	-125.6	-15.6	2.4M.
12)	11700.0000-12200.0000	37.5W	-37.5W	28.3	-28.3	125.6	-125.6		2.4M.
13)	11700.0000-12200.0000	37.5W	-37.5W	28.3	-28.4	125.6	-125.6		4003A ESV
14)	14000.0000-14500.0000	37.5W	-37.5W	28.3	-28.4	125.6	-125.6		4003A ESV
15)	11700.0000-12200.0000	37.5W	-37.5W	28.3	-28.4	125.6	-125.6		4006 ESV
16)	14000.0000-14500.0000	37.5W	-37.5W	28.3	-28.4	125.6	-125.6		4006 ESV
17)	14200.0000-14470.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		2406 ESV
18)	11700.0000-12200.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		2406 ESV
19)	11450.0000-11700.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		2406 ESV
20)	10950.0000-11200.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		2406 ESV
21)	12500.0000-12750.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		2406 ESV
22)	14200.0000-14470.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		6006 ESV
23)	11700.0000-12200.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		6006 ESV
24)	11450.0000-11700.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		6006 ESV
25)	10950.0000-11200.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		6006 ESV
26)	12500.0000-12750.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		6006 ESV
27)	10950.0000-14470.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		4009 ESV
28)	10950.0000-14470.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		6009 ESV
29)	10950.0000-14470.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		USAT 24
30)	14000.0000-14400.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6	-3.2	9797 ESV
31)	10950.0000-12200.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		9797 ESV
32)	10950.0000-12200.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		SE125ESV
33)	14200.0000-14470.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6	-29.95	SE125ESV
34)	14200.0000-14470.0000	37.5W	-37.5W	28.4	-28.4	125.6	-125.6		V60GESV



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
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Non Common Carrier

Grant date: 12/16/2015

Expiration Date: 12/30/2018

**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		
35)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V60GESV
36)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V110ESV
37)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V110ESV
38)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-6.2	V100GX4W
39)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V100GX4W
40)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-3.2	V100GX8W
41)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V100GX8W
42)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-6.2	4012GX4W
43)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		4012GX4W
44)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-3.2	4012GX8W
45)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		4012GX8W
46)	12500.0000-12750.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
47)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
48)	11700.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
49)	11450.0000-11700.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
50)	10950.0000-11200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
51)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
52)	12500.0000-12750.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
53)	11700.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
54)	11450.0000-11700.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
55)	10950.0000-11200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900

**D) Points of Communications**

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

- 1) 1 to TELSTAR 11N (S2357) @ 37.55 degrees W.L. (U.S.-licensed)
- 2) 1 to Permitted Space Station List
- 3) 1 to Estrela do Sul 2 (S2821) @ 63 degrees W.L. (Brazil-licensed)
- 4) 1 to MSAT-1 @ 107.5 degrees W.L. (Canadian Licensed) (Non-U.S.-licensed)
- 5) 1 to MSAT-1 @ 107.5 degrees W.L. (Canadian Licensed) (Non-U.S.-licensed)



**UNITED STATES OF AMERICA**  
**FEDERAL COMMUNICATIONS COMMISSION**  


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**RADIO STATION AUTHORIZATION**

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File Number: SES-MFS-20150922-00604

Non Common Carrier

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Expiration Date: 12/30/2018

**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)
1	1.8M.	1	1.8	PRODELIN	1184	295.9	3.4 AGL/ 286 AMSL	
Max Gains(s):		45.0 dBi @	12.0000 GHz	46.5 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				2.00				
Maximum aggregate output EIRP for all carriers (dBW) =				49.50				
1	15M.	1	15	VERTEX	15 KPK	295.9	13 AGL/ 295.85 AMSL	
Max Gains(s):		62.9 dBi @	12.0000 GHz	65.1 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =				1,445.00				
Maximum aggregate output EIRP for all carriers (dBW) =				93.10				
1	2.4M.	11	2.4	PRODELIN	1246	295.9	3.4 AGL/ 286 AMSL	
Max Gains(s):		47.5 dBi @	12.0000 GHz	49.2 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				58.20				
1	2406 ESV	250	0.6	SEATEL	2406	295.9	2 AGL	
Max Gains(s):		34.0 dBi @	12.0000 GHz	36.0 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				45.00				
1	4003A ESV	250	1	SEATEL	4003A	295.9	10 AMSL	
Max Gains(s):		40.1 dBi @	11.7000 GHz	41.8 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				4.00				
Maximum aggregate output EIRP for all carriers (dBW) =								
1	4006 ESV	250	1	SEATEL	4006	295.9	10 AMSL	
Max Gains(s):		40.1 dBi @	11.7000 GHz	41.8 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				.00				



**UNITED STATES OF AMERICA**  
**FEDERAL COMMUNICATIONS COMMISSION**  


---

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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)
1	4009 ESV	250	1	SEATEL	4009	295.9	3 AGL	
Max Gains(s):		40.1 dBi @	12.0000 GHz	41.8 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				50.30				
1	4012GX4W	500	1.06	SEATEL	4012 GX	295.9	4 AGL	
Max Gains(s):		40.8 dBi @	14.2500 GHz	39.8 dBi @	12.5000 GHz			
Maximum total input power at antenna flange (Watts) =				4.00				
Maximum aggregate output EIRP for all carriers (dBW) =				47.30				
1	4012GX8W	500	1.06	SEATEL	4012 GX	295.9	4 AGL	
Max Gains(s):		40.8 dBi @	14.2500 GHz	39.8 dBi @	12.5000 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				50.30				
1	6006 ESV	250	1.5	SEATEL	6006	295.9	3 AGL	
Max Gains(s):		42.5 dBi @	12.0000 GHz	43.5 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				7.10				
Maximum aggregate output EIRP for all carriers (dBW) =				52.00				
1	6009 ESV	250	1.5	SEATEL	6009	295.9	3 AGL	
Max Gains(s):		42.5 dBi @	12.0000 GHz	43.5 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =				7.10				
Maximum aggregate output EIRP for all carriers (dBW) =				52.00				
1	6012 ESV	250	1.5	SEATEL	6012	295.9	3 AGL	
Max Gains(s):		43.5 dBi @	14.0000 GHz	42.5 dBi @	12.0000 GHz			
Maximum total input power at antenna flange (Watts) =				7.10				
Maximum aggregate output EIRP for all carriers (dBW) =				52.00				



UNITED STATES OF AMERICA  
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---

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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)
1	9797 ESV	250	2.4	SEATEL	9797	295.9	4 AGL/ 0 AMSL	
Max Gains(s):		47.6 dBi @	12.0000 GHz	48.5 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =						8.00		
Maximum aggregate output EIRP for all carriers (dBW) =						57.50		
1	LMA4T11N	1	9	VERTEX	9 KPK	295.9	9.14 AGL/ 291 AMSL	
Max Gains(s):		58.7 dBi @	12.0000 GHz	60.4 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =						700.00		
Maximum aggregate output EIRP for all carriers (dBW) =						88.90		
1	S900	250	1.03	THRANE& THRANE	SAILOR 900	295.9	3 AGL	
Max Gains(s):		41.4 dBi @	14.2500 GHz	40.1 dBi @	11.9500 GHz			
Maximum total input power at antenna flange (Watts) =						5.66		
Maximum aggregate output EIRP for all carriers (dBW) =						48.93		
1	SE125ESV	250	1.25	AZIMUTH	SE125	295.9	3 AGL	
Max Gains(s):		42.1 dBi @	12.0000 GHz	42.5 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =						8.00		
Maximum aggregate output EIRP for all carriers (dBW) =						51.50		
1	USAT 24	250	0.6	SEATEL	USAT 24	295.9	2 AGL	
Max Gains(s):		34.0 dBi @	12.0000 GHz	36.0 dBi @	14.0000 GHz			
Maximum total input power at antenna flange (Watts) =						8.00		
Maximum aggregate output EIRP for all carriers (dBW) =						45.00		
1	V100GX4W	500	1	INTELLIAN	V100GX	295.9	4 AGL	
Max Gains(s):		41.3 dBi @	14.2500 GHz	39.8 dBi @	11.7500 GHz			
Maximum total input power at antenna flange (Watts) =						4.00		
Maximum aggregate output EIRP for all carriers (dBW) =						47.30		



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION**

**RADIO STATION AUTHORIZATION**

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Non Common Carrier

Grant date: 12/16/2015

Expiration Date: 12/30/2018

**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)
1	V100GX8W	500	1	INTELLIAN	V100GX	295.9	4 AGL	
Max Gains(s):		41.3 dBi @	14.2500 GHz	39.8 dBi @	11.7500 GHz			
Maximum total input power at antenna flange (Watts) =				8.00				
Maximum aggregate output EIRP for all carriers (dBW) =				50.30				
1	V110ESV	250	1.05	INTELLIAN	V110	295.9	3 AGL	
Max Gains(s):		39.6 dBi @	12.2000 GHz	41.7 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =				6.97				
Maximum aggregate output EIRP for all carriers (dBW) =				49.80				
1	V60GESV	250	0.6	INTELLIAN	V60G	295.9	3 AGL	
Max Gains(s):		35.3 dBi @	12.2000 GHz	38.1 dBi @	14.2500 GHz			
Maximum total input power at antenna flange (Watts) =				11.59				
Maximum aggregate output EIRP for all carriers (dBW) =				48.70				

**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:
  - 216 --- Operations in the 1544-1545/1645.5-1646.5 MHz frequency bands ARE LIMITED to distress and safety communications, in accordance with International Footnotes 5.356 and 5.375 of the ITU Radio Regulations.
  - 217 --- The " ALSAT" authority listed in this authorization as a point of communication is limited to communications in the 14.0-14.5 and 11.7-12.2 GHz bands only.
  - 367 --- The licensee must assure that no harmful interference will come to US operations broadcast satellite downlink operations from the FSS downlinks in the 12.5-12.75 GHz band.
  - 1010 --- Applicable to all receiving frequency bands. Emission designator indicates the maximum bandwidth of received signal at associated station(s). Maximum EIRP and maximum EIRP density are not applicable to receive operations.



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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:

- 1900 --- Applicable to all transmitting frequency bands. Authority is granted to transmit any number of RF carriers with the specified parameters on any discrete frequencies within associated band in accordance with the other terms and conditions of this authorization, subject to any additional limitations that may be required to avoid unacceptable levels of inter-satellite interference.
- 2916 --- Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.
- 3212 --- The licensee shall take extraordinary measures to ensure that multiple antennas co-located at the same site do not create potential exposure to radiofrequency radiation in excess of FCC safety guidelines. Antennas shall be surrounded by a fence, at least 2 meters tall with a locked gate, to prevent human exposure in excess of the FCC-specified safety limit of 1 mW/cm<sup>2</sup>. Warning signs, such as those discussed in the FCC's OET Bulletin 65, shall be posted informing members of the public to keep outside the locked area. All operations must be in compliance with Section 1.1307 (b)(3) of the Commission's Rules. (See 47 CFR 1.1307 (b) (3)).
- 3219 --- All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the Commission's radiofrequency (RF) exposure guidelines, pursuant to Section 1.1307(b)(1) through (b)(3) of the Commission's rules, or if not in compliance, file an Environmental Assessment (EA) as specified in Section 1.1311. See 47 CFR § 1.1307 (b) (5).
- 3462 --- Use of the extended Ku-band frequency band (13.75 GHz to 14.0 GHz) has been approved by The National Telecommunications and Information Administration. This authorization is subject to the terms and conditions set forth in the Commission's Report and Order adopted September 12, 1996, (11 FCC Record 11951).
- 3854 --- Licensee shall comply with EIRP density limit 71 dBW in any 6MHz band from 13.77 to 13.78 GHz, per ITU footnote S5.503 and the Section 25.204 (f) of the Commission's Rules.
- 4334 --- NG182 In the bands 10.95-11.2 GHz and 11.45-11.7 GHz, earth stations on vessels (ESV) may be authorized to communicate with U.S. earth stations through space stations of the fixed satellite service but must accept interference from terrestrial systems operating in accordance with Commission Rules.
- 5015 --- Upon completion of construction, each 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, date of the license and certification that the facility as authorized has been completed, that each antenna facility has been tested and is within 2 dB of the pattern specified in Section 25.209 and that the station is operational including the date of commencement of service and will remain operational during the license period unless the license is submitted for cancellation.





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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:

5208 --- The licensee shall take all necessary measures to ensure that the antenna 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 wherever such exposures might occur. 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](http://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.

5216 --- All operations shall be on a non-common carrier basis.

5241 --- The use of the frequency bands 10950 - 11200 and 11450 - 11700 MHz in the fixed satellite service is limited to international service.

5701 --- In Orbit Transfer (IOT) services may be provided using this emission for any viewable satellite angles where the elevation angle is greater than 5 degrees provided that the Licensee coordinates the frequency and power usage with all existing satellites in orbit, which use the same frequency bands, and are in the (IOT) path. The Licensee shall provide all other satellite operators in the (IOT) path with an emergency phone number where the Licensee (or his operators) can be immediately reached in the event that harmful interference occurs.

5797 --- The EIRP and EIRP Density values for the digital carriers are the maximum permissible under the Section 25.212 of the Commission's Rules.

5885 --- This authorization does not authorize Licensee to provide any Direct-to-Home ("DTH"), Direct Broadcast Satellite ("DBS") service or Digital Audio Radio Service ("DARS") to, from, or within the United States via a non-U.S.-licensed satellite.

5903 --- Licensee must provide the Naval Electromagnetic Spectrum Center (703-325-2750) a 24hr phone number which would be contacted when national defense and US Naval operation requirements necessitate immediate cessation of operations. The Licensee is aware that they would be required to temporarily cease satellite operations on these frequencies until notified otherwise.

5904 --- Licensee is urged, but is not required, to cooperate voluntarily with NASA in order to facilitate continued operation of the NASA TRMIM in the 13.793-13.805 GHz band.

5963 --- All operations on 12.50 - 12.75 GHz band are on an unprotected basis. The licensee shall not claim protection from, and is required to accept interference from, other lawfully operating satellites or radio communication systems.

5964 --- Telesat Network Services, Inc.'s request for of a waiver in order for ESVs licensed under SES-MOD-20120308-00248 to operate within the contours of the European and African Beams of the Telstar 11N (37.55 WL) satellite downlink in the 12.50-12.75 GHz band is granted on an unprotected basis.



**UNITED STATES OF AMERICA**  
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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:

- 5965 --- Telesat Network Services, Inc.'s license under SES-MOD-20120308-00248 is prohibited to receive Estrela Do Sul 2 satellite at 63 degrees WL on frequencies 10.95 - 11.2 GHz and 12.50 - 12.75 GHz.
- 90013 --- The licensee shall not operate in the band 14.0-14.2 GHz within 125 km of the NASA TDRSS facilities on Guam (located at latitude 13°36'55" N, longitude 144°51'22" E) or White Sands, New Mexico (located at latitude 32°20'59" N, longitude 106°36'31" W and latitude 32°32'40" N, longitude 106°36'48" W), or any future TDRSS facility NTIA notifies to the FCC, unless and until the licensee enters into an agreement with NASA that NTIA has approved. The licensee must conform its operations to the terms of any coordination agreement with the NASA and must file a copy of the agreement with the Commission within 30 days of execution.
- 90014 --- The licensee shall not operate in the band 14.47-14.50 GHz within (a) 45 km of the radio observatory on St. Croix, Virgin Islands (located at latitude 17°46' N, longitude 64°35' W); (b) 125 km of the radio observatory on Mauna Kea, Hawaii (located at latitude 19°48' N, longitude 155°28' W); and (c) 90 km of the Arecibo Observatory on Puerto Rico (located at latitude 18°20'46" W, longitude 66°45'11" N) unless and until the licensee enters into an agreement with the National Science Foundation that has been approved by NTIA. The licensee must conform its operations to the terms of any coordination agreement with the National Science Foundation and must file a copy of the agreement with the Commission within 30 days of execution.
- 90021 --- The licensee must restrain the following antennas in the input EIRP power spectral density to the maximum limits as specified below when N the maximum expected number of co-frequency simultaneously transmitting ESV earth stations in the same satellite receiving beam is equal to one: (1) Model 2406 and USAT24 -21.6 dBW/4kHz; (2) Model 4006 and 4009 -16.3 dBW/4kHz; and (3) Model 6006 and 6009 -14.0 dBW/4kHz.
- 90137 --- Telesat understands and complies with the mandates set forth in the Commission's ESV regulation that operations of ESVs in the 14.47 - 14.5 GHz band with the Thrane and Thrane model Sailor 900 antenna within the distances specified for the facilities set forth in Section 25.222(d) are only permitted after they have been successfully coordinated through NTIA/IRAC. Telesat may in the future pursue coordination of its operations contemplated herein with NTIA/IRAC in regards to the locations specified by Section 25.222(d). Unless and until such coordination is successfully completed Telesat will comply with Section 25.222(d) by not operating Ku-band ESVs at all on the specified frequencies within the specified distances of the facilities set forth in those provisions.
- 90138 --- Telesat will operate the Thrane & Thrane model Sailor 900 antenna in compliance with Section 25.222(c) of the Commission's rules.
- 90139 --- Telesat Network Services, Inc.'s ESVs model Thrane & Thrane Sailor 900 terminals licensed under SES-MOD-20140212-00056 will only communicate with Telstar 11N @ 37.55 degrees W.L. and request of waiver in order for Thrane & Thrane Sailor 900 terminals to operate within the contours of the European and African Beams of the Telstar 11 N @ 37.55 degrees W.L. satellite downlink in the 12.50-12.75 GHz and is granted on an unprotected basis.



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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 does not meet each required construction deadline by the required date of completion unless, before such date(s), a specific application is timely filed to request an extension of the construction deadline(s), supported with good cause why that failure to construct 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.**