



**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-MOD-20160324-00275

Non Common Carrier

Grant date: 09/29/2016

Expiration Date: 12/30/2018



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 September 29, 2017 (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	100HNON	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	H,V	500KG7W	Tx	64.40	43.30	15M.		DATA (QPSK, 8PSK, 16APSK)
32)	14000.0000-14500.0000	H,V	54M0G7W	Tx	84.70	43.30	15M.		DATA (QPSK, 8PSK, 16APSK)
33)	14000.0000-14500.0000	L,R	36M0G7W	Tx	73.40	47.84	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
34)	14000.0000-14500.0000	L,R	36M0G7W	Tx	86.10	60.54	15M.		DIGITAL, VIDEO, DATA AND VOICE
35)	13811.0000-14000.0000	H,V	54M0G7W	Tx	84.70	43.40	15M.		DATA (QPSK, 8PSK, 16APSK)
36)	13810.0000-14000.0000	L,R	54M0G7W	Tx	85.00	43.70	15M.		DIGITAL, VIDEO, DATA AND VOICE
37)	13780.0000-14000.0000	H,V	600KG7W	Tx	68.10	46.30	15M.		DATA (QPSK, 8PSK, 16APSK)
38)	13770.0000-13780.0000	H,V	4M00G7W	Tx	69.20	39.20	15M.		DATA (QPSK, 8PSK, 16APSK)
39)	13750.0000-13811.0000	H,V	54M0G7W	Tx	79.90	38.60	15M.		DATA (QPSK, 8PSK, 16APSK)
40)	13750.0000-13770.0000	H,V	600KG7W	Tx	68.10	46.30	15M.		DATA (QPSK, 8PSK, 16APSK)
41)	11705.5000-12199.0000	L,R	850KF2D	Rx			15M.		TT&C
42)	11700.0000-12200.0000	L,R		Rx			15M.		
43)	11700.0000-12200.0000	H,V	500KG7W	Rx			15M.		540 Kbps, 66 FEC, QPSK
44)	11700.0000-12200.0000	H,V	500KG7W	Rx			15M.		DATA (QPSK, 8PSK, 16APSK)
45)	11700.0000-12200.0000	H,V	54M0G7W	Rx			15M.		DATA (QPSK, 8PSK, 16APSK)
46)	11451.0000-11451.0000	L,R	850KF2D	Rx			15M.		ORION
47)	11450.5000-11450.5000	L,R	850KF2D	Rx			15M.		ORION
48)	11450.0000-11950.0000	L,R		Rx			15M.		INTELSAT
49)	10950.0000-11700.0000	L,R	54M0G7W	Rx			15M.		(WTO-COVERED SERVICES ONLY)
50)	10950.0000-11200.0000	L,R		Rx			15M.		INTELSAT
51)	10950.0000-11200.0000	H,V	500KG7W	Rx			15M.		DATA (QPSK, 8PSK, 16APSK)
52)	10950.0000-11200.0000	H,V	54M0G7W	Rx			15M.		DATA (QPSK, 8PSK, 16APSK)
53)	14000.0000-14500.0000	H,V	1M28G7W	Tx	58.20	33.10	2.4M.		
54)	14000.0000-14500.0000	H,V	2M56G7W	Tx	58.20	30.10	2.4M.		
55)	14000.0000-14500.0000	H,V	800KG7W	Tx	58.20	35.20	2.4M.		
56)	11700.0000-12200.0000	H,V	2M56G7W	Rx			2.4M.		



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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
57)	11700.0000-12200.0000	H,V	800KG7W	Rx			2.4M.		
58)	11700.0000-12200.0000	H,V	1M28G7W	Rx			2.4M.		ORION, PAS
59)	14200.0000-14470.0000	H,V	943KG7W	Tx	38.10	14.40	2406 ESV		1037 Kbps, QPSK, 33/50 FEC
60)	14000.0000-14500.0000	H,V	943KG7W	Tx	38.10	14.40	2406 ESV		1037 Kbps, QPSK, 33/50 FEC
61)	12500.0000-12750.0000	H,V	943KG7W	Rx			2406 ESV		NULL
62)	11700.0000-12200.0000	H,V	943KG7W	Rx			2406 ESV		NULL
63)	11450.0000-11700.0000	H,V	943KG7W	Rx			2406 ESV		NULL
64)	10950.0000-11200.0000	H,V	943KG7W	Rx			2406 ESV		NULL
65)	12500.0000-12750.0000	H,V	1M76G7W	Rx			4003A ESV		1560 KBPS, .533 FEC, QPSK
66)	12500.0000-12750.0000	H,V	3M52G7W	Rx			4003A ESV		1560 KBPS, .533 FEC, BPSK
67)	12500.0000-12750.0000	H,V	5M77G7W	Rx			4003A ESV		2560 KBPS, .533 FEC, BPSK
68)	11700.0000-12200.0000	H,V	1M76G7W	Rx			4003A ESV		1560 Kbps, .533 FEC, QPSK
69)	11700.0000-12200.0000	H,V	3M52G7W	Rx			4003A ESV		1560 Kbps, .533 FEC, BPSK
70)	11700.0000-12200.0000	H,V	5M77G7W	Rx			4003A ESV		2560 Kbps, .533 FEC, BPSK
71)	11450.0000-11700.0000	H,V	1M76G7W	Rx			4003A ESV		1560 Kbps, .533 FEC, QPSK
72)	11450.0000-11700.0000	H,V	3M52G7W	Rx			4003A ESV		1560 Kbps, .533 FEC, BPSK
73)	11450.0000-11700.0000	H,V	5M77G7W	Rx			4003A ESV		2560 Kbps, .533 FEC, BPSK
74)	10950.0000-11200.0000	H,V	1M76G7W	Rx			4003A ESV		1560 Kbps, .533 FEC, QPSK
75)	10950.0000-11200.0000	H,V	3M52G7W	Rx			4003A ESV		1560 Kbps, .533 FEC, BPSK
76)	10950.0000-11200.0000	H,V	5M77G7W	Rx			4003A ESV		2560 Kbps, .533 FEC, BPSK
77)	14000.0000-14500.0000	H,V	500KG7W	Tx	46.50	25.50	4006 ESV		540 Kbps, .66 FEC, QPSK
78)	14000.0000-14500.0000	H,V	1M60G7W	Tx	50.30	24.30	4006 ESV		1750 Kbps, .66 FEC, QPSK
79)	14000.0000-14500.0000	H,V	400KG7W	Tx	45.50	25.50	4006 ESV		350 Kbps, .533 FEC, QPSK
80)	14000.0000-14500.0000	H,V	470KG7W	Tx	46.20	25.50	4006 ESV		410 Kbps, .533 FEC, QPSK



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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
81)	12500.0000-12750.0000	H, V	1M76G7W	Rx			4006 ESV		1560 KBPS, .533 FEC, QPSK
82)	12500.0000-12750.0000	H, V	3M52G7W	Rx			4006 ESV		1560 KBPS, .533 FEC, BPSK
83)	12500.0000-12750.0000	H, V	5M77G7W	Rx			4006 ESV		2560 KBPS, .533 FEC, BPSK
84)	11700.0000-12200.0000	H, V	1M76G7W	Rx			4006 ESV		1560 Kbps, .533 FEC, QPSK
85)	11700.0000-12200.0000	H, V	5M77G7W	Rx			4006 ESV		2560 Kbps, .533 FEC, BPSK
86)	11450.0000-11700.0000	H, V	1M76G7W	Rx			4006 ESV		1560 Kbps, .533 FEC, QPSK
87)	11450.0000-11700.0000	H, V	3M52G7W	Rx			4006 ESV		1560 Kbps, .533 FEC, BPSK
88)	11450.0000-11700.0000	H, V	5M77G7W	Rx			4006 ESV		2560 Kbps, .533 FEC, BPSK
89)	10950.0000-11200.0000	H, V	1M76G7W	Rx			4006 ESV		1560 Kbps, .533 FEC, QPSK
90)	10950.0000-11200.0000	H, V	3M52G7W	Rx			4006 ESV		1560 Kbps, .533 FEC, BPSK
91)	10950.0000-11200.0000	H, V	5M77G7W	Rx			4006 ESV		2560 Kbps, .533 FEC, BPSK
92)	14200.0000-14470.0000	H, V	400KG7W	Tx	45.50	25.50	4009 ESV		350KBPS, .533 FEC, QPSK
93)	14200.0000-14470.0000	H, V	500KG7W	Tx	46.50	25.50	4009 ESV		540 KBPS, .66 FEC, QPSK
94)	14200.0000-14470.0000	H, V	470KG7W	Tx	46.20	25.50	4009 ESV		410 KBPS, .533 FEC, QPSK
95)	14200.0000-14470.0000	H, V	1M60G7W	Tx	50.30	24.30	4009 ESV		1750 KBPS, .66 FEC, QPSK
96)	12500.0000-12750.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
97)	12500.0000-12750.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
98)	12500.0000-12750.0000	H, V	5M77G7W	Rx			4009 ESV		NULL
99)	11700.0000-12200.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
100)	11700.0000-12200.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
101)	11700.0000-12200.0000	H, V	5M77G7W	Rx			4009 ESV		NULL
102)	11450.0000-11700.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
103)	11450.0000-11700.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
104)	11450.0000-11700.0000	H, V	5M77G7W	Rx			4009 ESV		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
105)	10950.0000-11200.0000	H, V	1M76G7W	Rx			4009 ESV		NULL
106)	10950.0000-11200.0000	H, V	3M52G7W	Rx			4009 ESV		NULL
107)	10950.0000-11200.0000	H, V	5M77G7W	Rx			4009 ESV		NULL
108)	14000.0000-14500.0000	H, V	943KG7W	Tx	47.30	23.60	4012GX4W		1037 KBPS, QPSK, 33/50 FEC
109)	12500.0000-12750.0000	H, V	943KG7W	Rx			4012GX4W		NULL
110)	11700.0000-12200.0000	H, V	943KG7W	Rx			4012GX4W		NULL
111)	11450.0000-11700.0000	H, V	943KG7W	Rx			4012GX4W		NULL
112)	10950.0000-11200.0000	H, V	943KG7W	Rx			4012GX4W		NULL
113)	14000.0000-14500.0000	H, V	943KG7W	Tx	50.30	26.60	4012GX8W		1037 KBPS, QPSK, 33/50 FEC
114)	12500.0000-12750.0000	H, V	943KG7W	Rx			4012GX8W		NULL
115)	11700.0000-12200.0000	H, V	943KG7W	Rx			4012GX8W		NULL
116)	11450.0000-11700.0000	H, V	943KG7W	Rx			4012GX8W		NULL
117)	10950.0000-11200.0000	H, V	943KG7W	Rx			4012GX8W		NULL
118)	14200.0000-14470.0000	H, V	943KG7W	Tx	52.00	28.40	6006 ESV		1037 Kbps, QPSK, 33/50 FEC
119)	14000.0000-14500.0000	H, V	943KG7W	Tx	52.00	28.40	6006 ESV		1037 Kbps, QPSK, 33/50 FEC
120)	12500.0000-12750.0000	H, V	943KG7W	Rx			6006 ESV		NULL
121)	11700.0000-12200.0000	H, V	943KG7W	Rx			6006 ESV		NULL
122)	11450.0000-11700.0000	H, V	943KG7W	Rx			6006 ESV		NULL
123)	10950.0000-11200.0000	H, V	943KG7W	Rx			6006 ESV		NULL
124)	14200.0000-14470.0000	H, V	943KG7W	Tx	52.00	28.40	6009 ESV		1037 KBPS, QPSK, 33/50 FEC
125)	12500.0000-12750.0000	H, V	943KG7W	Rx			6009 ESV		NULL
126)	11700.0000-12200.0000	H, V	943KG7W	Rx			6009 ESV		NULL
127)	11450.0000-11700.0000	H, V	943KG7W	Rx			6009 ESV		NULL
128)	10950.0000-11200.0000	H, V	943KG7W	Rx			6009 ESV		NULL



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129)	14200.0000-14470.0000	H, V	943KG7W	Tx	52.00	28.40	6012 ESV		1037 KBPS, QPSK, 33/50 FEC
130)	12500.0000-12750.0000	H, V	943KG7W	Rx			6012 ESV		NULL
131)	11700.0000-12200.0000	H, V	943KG7W	Rx			6012 ESV		NULL
132)	11450.0000-11700.0000	H, V	943KG7W	Rx			6012 ESV		NULL
133)	10950.0000-11200.0000	H, V	943KG7W	Rx			6012 ESV		NULL
134)	14200.0000-14470.0000	H, V	943KG7W	Tx	57.50	33.80	9797 ESV		1037 KBPS, QPSK, 33/50 FEC
135)	12500.0000-12750.0000	H, V	943KG7W	Rx			9797 ESV		NULL
136)	11700.0000-12200.0000	R	943KG7W	Rx			9797 ESV		NULL
137)	11450.0000-11700.0000	H, V	943KG7W	Rx			9797 ESV		NULL
138)	14498.0000-14500.0000	H, V	850KF2D	Tx	69.70	46.40	LMA4T11N		
139)	14000.0000-14500.0000	H, V	100HN0N	Tx	85.50	46.40	LMA4T11N		
140)	14000.0000-14500.0000	H, V	17M5F3F	Tx	79.30	52.30	LMA4T11N		
141)	14000.0000-14500.0000	H, V	1M80G1D	Tx	61.30	34.80	LMA4T11N		
142)	14000.0000-14500.0000	H, V	1M80G1E	Tx	61.30	34.80	LMA4T11N		
143)	14000.0000-14500.0000	H, V	1M80G1F	Tx	61.30	34.80	LMA4T11N		
144)	14000.0000-14500.0000	H, V	2M70G1C	Tx	74.70	46.40	LMA4T11N		
145)	14000.0000-14500.0000	H, V	2M70G1D	Tx	74.70	46.40	LMA4T11N		
146)	14000.0000-14500.0000	H, V	2M70G1E	Tx	74.70	46.40	LMA4T11N		
147)	14000.0000-14500.0000	H, V	36M0F3F	Tx	70.80	43.80	LMA4T11N		
148)	14000.0000-14500.0000	H, V	41M1G1C	Tx	86.50	46.40	LMA4T11N		
149)	14000.0000-14500.0000	H, V	41M1G1D	Tx	86.50	46.40	LMA4T11N		
150)	14000.0000-14500.0000	H, V	41M1G1E	Tx	86.50	46.40	LMA4T11N		
151)	14000.0000-14500.0000	H, V	41M1G1F	Tx	86.50	46.40	LMA4T11N		
152)	14000.0000-14500.0000	H, V	49K0G1D	Tx	45.70	34.80	LMA4T11N		



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Authorization Type: Modification of License

File Number: SES-MOD-20160324-00275

Non Common Carrier

Grant date: 09/29/2016

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 /4kHz (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
153)	14000.0000-14500.0000	H, V	49K0G1E	Tx	45.70	34.80	LMA4T11N		
154)	14000.0000-14500.0000	H, V	49K0G1F	Tx	45.70	34.80	LMA4T11N		
155)	14000.0000-14500.0000	H, V	7M04G1D	Tx	67.30	34.80	LMA4T11N		
156)	14000.0000-14500.0000	H, V	7M04G1E	Tx	67.30	34.80	LMA4T11N		
157)	14000.0000-14500.0000	H, V	7M04G1F	Tx	67.30	34.80	LMA4T11N		
158)	14000.0000-14500.0000	H, V	1M76G7W	Tx	69.00	42.50	LMA4T11N		1560 Kbps, .533 FEC, QPSK
159)	14000.0000-14500.0000	H, V	3M52G7W	Tx	69.00	39.50	LMA4T11N		2560 Kbps, .533 FEC, BPSK
160)	14000.0000-14500.0000	H, V	5M77G7W	Tx	69.00	37.40	LMA4T11N		2560 Kbps, .533 FEC, BPSK
161)	13810.0000-14000.0000	H, V	1M76G7W	Tx	69.00	42.50	LMA4T11N		1560 Kbps, .533 FEC, QPSK
162)	13810.0000-14000.0000	H, V	3M52G7W	Tx	69.00	39.50	LMA4T11N		1560 Kbps, .533 FEC, QPSK
163)	13810.0000-14000.0000	H, V	5M77G7W	Tx	69.00	37.40	LMA4T11N		2560 Kbps, .533 FEC, BPSK
164)	11700.0000-12200.0000	H, V		Rx			LMA4T11N		
165)	11700.0000-12200.0000	H, V	400KG7W	Rx			LMA4T11N		350 Kbps, 533 FEC, QPSK
166)	11700.0000-12200.0000	H, V	470KG7W	Rx			LMA4T11N		410 Kbps, 533 FEC, QPSK
167)	11700.0000-12200.0000	H, V	1M60G7W	Rx			LMA4T11N		1750 Kbps, 66 FEC, QPSK
168)	11451.0000-11451.0000	H, V	850KF2D	Rx			LMA4T11N		ORION
169)	11450.5000-11450.5000	H, V	850KF2D	Rx			LMA4T11N		ORION
170)	11450.0000-11950.0000	H, V		Rx			LMA4T11N		INTELSAT
171)	11450.0000-11700.0000	H, V	400KG7W	Rx			LMA4T11N		350 Kbps, 533 FEC, QPSK
172)	11450.0000-11700.0000	H, V	470KG7W	Rx			LMA4T11N		410 Kbps, 533 FEC, QPSK
173)	11450.0000-11700.0000	H, V	500KG7W	Rx			LMA4T11N		540 Kbps, 66 FEC, QPSK
174)	11450.0000-11700.0000	H, V	1M60G7W	Rx			LMA4T11N		1750 Kbps, 66 FEC, QPSK
175)	10950.0000-11200.0000	H, V		Rx			LMA4T11N		INTELSAT
176)	10950.0000-11200.0000	H, V	400KG7W	Rx			LMA4T11N		350 Kbps, 533 FEC, QPSK



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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
177)	10950.0000-11200.0000	H, V	500KG7W	Rx			LMA4T11N		540 Kbps, 66 FEC, QPSK
178)	10950.0000-11200.0000	H, V	1M60G7W	Rx			LMA4T11N		1750 Kbps, .66 FEC, QPSK
179)	10950.0000-11200.0000	H, V	470KG7W	Rx			LMA4T11N		410 Kbps, 533 FEC, QPSK
180)	14200.0000-14470.0000	H, V	910KG7W	Tx	48.93	25.37	S900		QPSK
181)	12500.0000-12750.0000	H, V	910KG7W	Rx			S900		NULL
182)	11700.0000-12200.0000	H, V	910KG7W	Rx			S900		NULL
183)	11450.0000-11700.0000	H, V	910KG7W	Rx			S900		NULL
184)	14200.0000-14470.0000	H, V	907KG7W	Tx	46.10	22.55	SE125ESV		1037 KBPS, QPSK, 33/50 FEC
185)	11700.0000-12200.0000	H, V	907KG7W	Rx			SE125ESV		
186)	11450.0000-11700.0000	H, V	907KG7W	Rx			SE125ESV		
187)	10950.0000-11200.0000	H, V	907KG7W	Rx			SE125ESV		
188)	14200.0000-14470.0000	H, V	943KG7W	Tx	38.10	14.40	USAT 24		1037 KBPS, QPSK, 33/50 FEC
189)	12500.0000-12750.0000	H, V	943KG7W	Rx			USAT 24		NULL
190)	11700.0000-12200.0000	H, V	943KG7W	Rx			USAT 24		NULL
191)	11450.0000-11700.0000	H, V	943KG7W	Rx			USAT 24		NULL
192)	10950.0000-11200.0000	H, V	943KG7W	Rx			USAT 24		NULL
193)	14000.0000-14500.0000	H, V	943KG7W	Tx	47.30	23.60	V100GX4W		1037 KBPS, QPSK, 33/50 FEC
194)	12500.0000-12750.0000	H, V	943KG7W	Rx			V100GX4W		NULL
195)	11700.0000-12200.0000	H, V	943KG7W	Rx			V100GX4W		NULL
196)	11450.0000-11700.0000	H, V	943KG7W	Rx			V100GX4W		NULL
197)	10950.0000-11200.0000	H, V	943KG7W	Rx			V100GX4W		NULL
198)	14000.0000-14500.0000	H, V	943KG7W	Tx	50.30	26.60	V100GX8W		1037 KBPS, QPSK, 33/50 FEC
199)	12500.0000-12750.0000	H, V	943KG7W	Rx			V100GX8W		NULL
200)	11700.0000-12200.0000	H, V	943KG7W	Rx			V100GX8W		NULL



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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
201)	11450.0000-11700.0000	H, V	943KG7W	Rx			V100GX8W		NULL
202)	10950.0000-11200.0000	H, V	943KG7W	Rx			V100GX8W		NULL
203)	14200.0000-14470.0000	H, V	970KG7W	Tx	49.30	25.50	V110ESV		QPSK, BPSK
204)	11700.0000-12200.0000	H, V	970KG7W	Rx			V110ESV		QPSK, BPSK
205)	11450.0000-11700.0000	H, V	970KG7W	Rx			V110ESV		QPSK, BPSK
206)	10950.0000-11200.0000	H, V	970KG7W	Rx			V110ESV		QPSK, BPSK
207)	14200.0000-14470.0000	H, V	717KG7W	Tx	38.30	15.80	V60GESV		QPSK, BPSK
208)	11700.0000-12200.0000	H, V	717KG7W	Rx			V60GESV		QPSK, BPSK
209)	11450.0000-11700.0000	H, V	717KG7W	Rx			V60GESV		QPSK, BPSK
210)	10950.0000-11200.0000	H, V	717KG7W	Rx			V60GESV		QPSK, BPSK

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)	13750.0000-14000.0000	37.5W	37.5W	42.3	42.3	155.9	155.9	-18.4	15M.
2)	13750.0000-14000.0000	63.0W	63.0W	28.4	28.4	125.6	125.6	-22.7	15M.
3)	14000.0000-14500.0000	7.0W	118.7W	05.6	29.1	101.7	233.4	-5.2	15M.
4)	14000.0000-14500.0000	7.0W	106.5W	05.6	36.7	101.7	220.2	-5.2	15M.
5)	10950.0000-11200.0000	7.0W	106.5W	05.6	36.7	101.7	220.2	0	15M.
6)	11450.0000-12200.0000	7.0W	106.5W	05.6	36.7	101.7	220.2	0	15M.
7)	13750.0000-14000.0000	15.0W	15.0W	11.8	11.8	107.2	107.2	-8.7	15M.
8)	11450.0000-12200.0000	7.0W	118.7W	05.6	29.1	101.7	233.4		15M.
9)	10950.0000-11200.0000	7.0W	118.7W	05.6	29.1	101.7	233.4		15M.
10)	14000.0000-14500.0000	37.5W	37.5W	28.3	28.3	125.6	125.6	-25.2	LMA4T11N
11)	10950.0000-11200.0000	37.5W	37.5W	28.3	28.3	125.6	125.6	0	LMA4T11N
12)	11450.0000-12200.0000	37.5W	37.5W	28.3	28.3	125.6	125.6	0	LMA4T11N



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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		
13)	14000.0000-14500.0000	37.5W	37.5W	28.3	28.3	125.6	125.6	-15.6	1.8M.
14)	11700.0000-12200.0000	37.5W	37.5W	28.3	28.3	125.6	125.6	0	1.8M.
15)	14000.0000-14500.0000	37.5W	37.5W	28.3	28.3	125.6	125.6	-15.6	2.4M.
16)	11700.0000-12200.0000	37.5W	37.5W	28.3	28.3	125.6	125.6		2.4M.
17)	11700.0000-12200.0000	37.5W	37.5W	28.3	28.4	125.6	125.6		4003A ESV
18)	14000.0000-14500.0000	37.5W	37.5W	28.3	28.4	125.6	125.6		4003A ESV
19)	11700.0000-12200.0000	37.5W	37.5W	28.3	28.4	125.6	125.6		4006 ESV
20)	14000.0000-14500.0000	37.5W	37.5W	28.3	28.4	125.6	125.6		4006 ESV
21)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		2406 ESV
22)	11700.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		2406 ESV
23)	11450.0000-11700.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		2406 ESV
24)	10950.0000-11200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		2406 ESV
25)	12500.0000-12750.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		2406 ESV
26)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6006 ESV
27)	11700.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6006 ESV
28)	11450.0000-11700.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6006 ESV
29)	10950.0000-11200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6006 ESV
30)	12500.0000-12750.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6006 ESV
31)	10950.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		4009 ESV
32)	10950.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6009 ESV
33)	10950.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		USAT 24
34)	14000.0000-14400.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-3.2	9797 ESV
35)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		9797 ESV
36)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		SE125ESV
37)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-29.95	SE125ESV
38)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V60GESV
39)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V60GESV
40)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V110ESV
41)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V110ESV
42)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-6.2	V100GX4W
43)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V100GX4W
44)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-3.2	V100GX8W
45)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		V100GX8W
46)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-6.2	4012GX4W



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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		
47)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		4012GX4W
48)	14000.0000-14500.0000	37.5W	37.5W	28.4	28.4	125.6	125.6	-3.2	4012GX8W
49)	10950.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		4012GX8W
50)	12500.0000-12750.0000	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		6012 ESV
52)	11700.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
53)	11450.0000-11700.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
54)	10950.0000-11200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		6012 ESV
55)	14200.0000-14470.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
56)	12500.0000-12750.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
57)	11700.0000-12200.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
58)	11450.0000-11700.0000	37.5W	37.5W	28.4	28.4	125.6	125.6		S900
59)	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)
- 6) 1 to Telstar 12 (S2462) @ 15 W.L. (U.S.-licensed)

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			



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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	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			65.1 dBi @ 13.8000 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			
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			



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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	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		
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		



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RADIO STATION AUTHORIZATION

Name: Telesat Network Services, Inc.

Call Sign: KA399

Authorization Type: Modification of License

File Number: SES-MOD-20160324-00275

Non Common Carrier

Grant date: 09/29/2016

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	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		
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		



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Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
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		

F) Remote Control Point:

1	ALLAN PARK EARTH STATION, PO BOX 99	Call Sign: E030029
	HANOVER, ONTARIO N4N3C3,	
	519-370-2841	

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:

- 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.
- 2300 --- Authority is granted to operate this station by remote control provided that: (1) the parameters of the transmissions of this station monitored at the remote control point, and the operational functions sufficient to ensure that the operations of this station are in full compliance with the station authorization at all times; (2) upon detection by the grantee, or upon notification from the Commission, of a deviation of the operation of this station, transmissions shall be immediately suspended until the deviation is corrected, except that transmissions concerning the immediate safety of life or property may be conducted for the duration of such emergency; and (3) the grantee shall have available, at all times, the technical personnel necessary to perform the technical servicing and maintenance of this station expeditiously. See also Public Notice "The International Bureau Provides Guidance Concerning the Relocation of Earth Station Remote Control Points", DA 06-978 (rel. May 4, 2006).
- 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.
- 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) 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.



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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:

- 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.
- 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.



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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:

- 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.

