

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: IS 11		e. Estimated Date of Placement into Service:		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): Years		j. Number of transponders offered on a common carrier basis:	
c. Construction Completion Date:		g. Total Number of Transponders: 34		k. Total Common Carrier Transponder Bandwidth: MHz	
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 1552 MHz		i. Orbit Type: Mark all boxes that apply: <input checked="" type="checkbox"/> GSO <input type="checkbox"/> NGSO	

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (.Hz)		Upper Frequency (.Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
5925	M	6425	M	R	Fixed Satellite Service
3700	M	4200	M	T	Fixed Satellite Service
12750	M	13250	M	R	Fixed Satellite Service
13750	M	14000	M	R	Fixed Satellite Service
10700	M	11450	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 43 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: Replaces PAS 8B Satellite	
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:		Range of orbital are in which adequate service can be provided (Optional): Degrees E/W	
d. Toward West:	0.05 Degrees	e. Toward East:		g. Westernmost: h. Easternmost:	
		0.05 Degrees			
i. Reason for service are selection (Optional):					

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):

S4b. Total Number of Orbital Planes in Network or System:

S4d. Orbit Epoch Date:

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the initial phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

NO NGSO DATA FILED

**FEDERAL COMMUNICATIONS COMMISSION
 SATELLITE SPACE STATION AUTHORIZATIONS
 FCC Form 312 - Schedule S: (Technical and Operational Description)**

S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
1	S		North America and South America
2	S		North America and South America and Europe
3	S		East Brazil
4	S		Global

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross- Polar Iso- lation (dB)	(h) Polar- ization Switch- able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive			Input Attenuator (dB)	
										(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noise Temp (k)	(o) G/T Max. Gain Pt. (dB/K)	(p) Min. Saturation Flux Density (dBW/m2)	(q) Max. Value	(r) Step Size
		(c) Peak (dBi)	(d) Edge (dBi)														
CHU	R	30.6	20.6	0.1	0.6	18	N	0	1				488	3.7	-103.7	25	1
CVU	R	30.6	20.6	0.1	0.6	18	N	90	1				488	3.7	-103.7	25	1
CHD	T	27.5	19.5	0.1	0.6	24	N	0	2	2.2	33.1	42.7					
CVD	T	27.5	19.5	0.1	0.6	24	N	90	2	2.2	33.1	42.7					
KHU	R	29.2	23.2	0.1	0.6	26	N	0	2				550	1.8	-98.8	25	1
KVUL	R	29.2	23.2	0.1	0.6	26	N	90	2				550	1.8	-98.8	25	1
KHD	T	37.5	33.5	0.1	0.6	30	N	0	3	2.5	61.7	55.4					
KVDL	T	37.5	33.5	0.1	0.6	30	N	90	3	2.5	61.7	55.4					
UPC	T	13	11	0.1	0.6		N	0	4	1.6	2.1	16.2					
UPC	T	13	11	0.1	0.6		N	90	4	1.6	2.1	16.2					
CMD	R	29.2	19.2	0.1	0.6		N	0	2				5655	-8.3	-117.3		
CMD	R	29.2	19.2	0.1	0.6		N	90	2				5655	-8.3	-117.3		
CMD	R	13	6	0.1	0.6		N		4				17038	-29.3	-96.4		
CMD	R	3	-1	0.1	0.6		N		4				5501	-34.4	-91.3		
TLM	T	21	18	0.1	0.6		N	0	4	4.6	0.1	12.4					
TLM	T	13	6	0.1	0.6		N		4	8.9	1.1	13.4					
TLM	T	3	-1	0.1	0.6		N		4	5.7	2.3	6.6					

**FEDERAL COMMUNICATIONS COMMISSION
 SATELLITE SPACE STATION AUTHORIZATIONS
 FCC Form 312 - Schedule S: (Technical and Operational Description)**

S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
 Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz)				
						At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
CHU	R	C	43		CHUL.gxt					
CVU	R	C	43		CVUL.gxt					
CHD	T	C	43		CHDL.gxt	-152	-150.5	-150.3	-150.2	-150.1
CVD	T	C	43		CVDL.gxt	-152	-150.5	-150.3	-150.2	-150.1
KHU	R	C	43		KHUL.gxt					
KVUL	R	C	43		KVUL.gxt					
KHD	T	C	43		KHDL.gxt	-150	-147.5	-145	-142.5	-140
KVDL	T	C	43		KVDL.gxt	-150	-147.5	-145	-142.5	-140
UPC	T	C	43	UPCH.pdf		-155	-154.9	-154.8	-154.7	-154.6
UPC	T	C	43	UPCV.pdf		-155	-154.9	-154.8	-154.7	-154.6
CMD	R	C	43		CMDH.gxt					
CMD	R	C	43		CMDV.gxt					
CMD	R	C	43	CMDW.pdf						
CMD	R	C	43	CMDO.pdf						
TLM	T	C	43	TLMG.pdf						
TLM	T	C	43	TLMW.pdf						
TLM	T	C	43	TLMO.pdf						
CHU	R	X	43		CHUX.gxt					
CVU	R	X	43		CVUX.gxt					
CHD	T	X	43		CHDX.gxt					
CVD	T	X	43		CVDX.gxt					
KHU	R	X	43		KHUX.gxt					
KVUL	R	X	43		KVUX.gxt					
KHD	T	X	43		KHDX.gxt					
KVDL	T	X	43		KVDX.gxt					

**FEDERAL COMMUNICATIONS COMMISSION
 SATELLITE SPACE STATION AUTHORIZATIONS
 FCC Form 312 - Schedule S: (Technical and Operational Description)**

S9. SPACE STATION CHANNELS For each frequency channel provide: S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
CU1	54000	R	5955	H	C
CU2	54000	R	5955	V	C
CU3	54000	R	6015	H	C
CU4	54000	R	6015	V	C
CU5	54000	R	6075	H	C
CU6	54000	R	6075	V	C
CU7	64000	R	6140	H	C
CU8	64000	R	6140	V	C
CU9	54000	R	6205	H	C
CU10	54000	R	6205	V	C
CU11	54000	R	6265	H	C
CU12	54000	R	6265	V	C
CU13	54000	R	6325	H	C
CU14	54000	R	6325	V	C
CU15	64000	R	6390	H	C
CU16	64000	R	6390	V	C
CD1	54000	T	3730	V	C
CD2	54000	T	3730	H	C
CD3	54000	T	3790	V	C
CD4	54000	T	3790	H	C
CD5	54000	T	3850	V	C
CD6	54000	T	3850	H	C
CD7	64000	T	3915	V	C
CD8	64000	T	3915	H	C
CD9	54000	T	3980	V	C
CD10	54000	T	3980	H	C
CD11	54000	T	4040	V	C
CD12	54000	T	4040	H	C
CD13	54000	T	4100	V	C
CD14	54000	T	4100	H	C

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
1C	125.6	CU1	CHUL	CD1	CVDL
2C	125.6	CU2	CVUL	CD2	CHDL
3C	125.6	CU3	CHUL	CD3	CVDL
4C	125.6	CU4	CVUL	CD4	CHDL
5C	125.6	CU5	CHUL	CD5	CVDL
6C	125.6	CU6	CVUL	CD6	CHDL
7C	125.6	CU7	CHUL	CD7	CVDL
8C	125.6	CU8	CVUL	CD8	CHDL
9C	125.6	CU9	CHUL	CD9	CVDL
10C	125.6	CU10	CVUL	CD10	CHDL
11C	125.6	CU11	CHUL	CD11	CVDL
12C	125.6	CU12	CVUL	CD12	CHDL
13C	125.6	CU13	CHUL	CD13	CVDL
14C	125.6	CU14	CVUL	CD14	CHDL
15C	125.6	CU15	CHUL	CD15	CVDL
16C	125.6	CU16	CVUL	CD16	CHDL
1K	131.2	KU1	KHUL	KD1	KVDL
13K	131.2	KU13	KVUL	KD13	KHDL
3K	131.2	KU3	KHUL	KD3	KVDL
15K	131.2	KU15	KVUL	KD15	KHDL
5K	131.2	KU5	KHUL	KD5	KVDL
17K	131.2	KU17	KVUL	KD17	KHDL
7K	131.2	KU7	KHUL	KD7	KVDL
19K	131.2	KU19	KVUL	KD19	KHDL
9K	131.2	KU9	KHUL	KD9	KVDL
21K	131.2	KU21	KVUL	KD21	KHDL
11K	131.2	KU11	KHUL	KD11	KVDL
23K	131.2	KU23	KVUL	KD23	KHDL
25K	131.2	KU25	KHUL	KD25	KVDL
31K	131.2	KU31	KVUL	KD31	KHDL

CD15	64000	T	4165	V	C
CD16	64000	T	4165	H	C
KU1	36000	R	12772	H	C
KU13	36000	R	12772	V	C
KU3	36000	R	12852	H	C
KU15	36000	R	12852	V	C
KU5	36000	R	12932	H	C
KU17	36000	R	12932	V	C
KU7	36000	R	13022	H	C
KU19	36000	R	13022	V	C
KU9	36000	R	13102	H	C
KU21	36000	R	13102	V	C
KU11	36000	R	13182	H	C
KU23	36000	R	13182	V	C
KU25	36000	R	13774	H	C
KU31	36000	R	13774	V	C
KU27	36000	R	13854	H	C
KU33	36000	R	13854	V	C
KU29	36000	R	13934	H	C
KU35	36000	R	13934	V	C
KD1	36000	T	10722	V	C
KD13	36000	T	10722	H	C
KD3	36000	T	10802	V	C
KD15	36000	T	10802	H	C
KD5	36000	T	10882	V	C
KD17	36000	T	10882	H	C
KD7	36000	T	11222	V	C
KD19	36000	T	11222	H	C
KD9	36000	T	11302	V	C
KD21	36000	T	11302	H	C
KD11	36000	T	11382	V	C
KD23	36000	T	11382	H	C
KD25	36000	T	10970	V	C
KD31	36000	T	10970	H	C
KD27	36000	T	11050	V	C
KD33	36000	T	11050	H	C
KD29	36000	T	11130	V	C
KD35	36000	T	11130	H	C
ULPC1	25	T	3701	H	C

27K	131.2	KU27	KHUL	KD27	KVDL
33K	131.2	KU33	KVUL	KD33	KHDL
29K	131.2	KU29	KHUL	KD29	KVDL
35K	131.2	KU35	KVUL	KD35	KHDL

ULPC2	25	T	4199.5	V	C
CMD1	1000	R	13246.5	H	T
CMD2	1000	R	13995.5	V	T
CMD3	1000	R	13246.5	L	T
CMD4	1000	R	13995.5	L	T
TLM1	500	T	11448	H	T
TLM2	500	T	11449	H	T
TLM3	500	T	11448	R	T
TLM4	500	T	11449	R	T

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e) Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
DC1	49M0G7W	49046.8	4	60000	0.75		6.1	12.7
DC2	44M8G7W	44751.5	4	34368	0.5		3.1	10.8
DC3	4M15G7W	4154	4	6000	0.75		6.7	13.8
DC4	1M21G7W	1212.8	4	1544	0.75		5.7	12.7
DC5	75K4G7W	75.4	4	64	0.5		3	10.5
DK1	30M1G7W	30133	4	36863	0.75		10.6	16.2
DK2	4M15G7W	4154	4	6000	0.75		10	15.9
DK3	1M21G7W	1212.8	4	1544	0.75		9.2	15.1
DK4	1M23G7W	1229	2	512	0.5		8.1	15.5
DK5	307KG7W	307	2	128	0.5		7.8	18.2
DK6	75K4G7W	75.4	4	64	0.5		6.6	13.5

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise- Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
AC1	30M0F3F	30000	TV/FM	1					NTSC	12.8	2.6		10	16.1
AC2	24M0F3F	24000	TV/FM	1					NTSC	12.8	2.6		10	16.5
AK1	36M0F3F	36000	TV/FM	1					NTSC	12.8	2.6		13.7	19.9

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range (a) Start (b) End		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g) Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
		(c) Digital (Table S11)	(d) Analog (Table S12)					(i) Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW) (j) Min. (k) Max.		EIRP (dBW) (l) Min. (m) Max.		(n) Max. Power Flux Density (dBW/m ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
1C	16C		AC2	2	24000	PAS11_LINK_	4000	51	14.2	24.2	30.2	38.2	-153.9	31
1C	16C	DC2		1		PAS11_NOTE.t		51	13.2	23.2	34.7	42.7	-159.9	21
1C	16C	DC3		5	6875	PAS11_NOTE.t		51	7.9	17.9	21.4	29.4	-162.9	26.2
1C	16C	DC4		24	1550	PAS11_NOTE.t		51	1.4	11.4	14.9	22.9	-164	26.2
1C	16C	DC5		424	100	PAS11_NOTE.t		51	-11.1	-1.1	2.4	10.4	-164.5	23.6
7C	16C		AC1	2	30000	PAS11_NOTE.t		51	14.2	24.2	30.2	38.2	-153.9	33
7C	16C	DC1		1		PAS11_NOTE.t		51	13.2	23.2	34.7	42.7	-160.3	26.2
7C	16C	DC3		6	6875	PAS11_NOTE.t		51	7.1	17.1	20.6	28.6	-163.6	26.6
7C	16C	DC4		28	1550	PAS11_NOTE.t		51	0.6	10.6	14.1	22.1	-164.8	26.6
7C	16C	DC5		436	100	PAS11_NOTE.t		51	-11.2	-1.2	2.3	10.3	-164.6	23.6
25K	35K		AK1	1		PAS11_NOTE.t	4000	56.7	17.4	23.4	51.4	55.4	-136.7	21.6
25K	35K	DK1		1		PAS11_NOTE.t		56.7	17.4	23.4	51.4	55.4	-145.5	18.1
25K	35K	DK2		3	6875	PAS11_NOTE.t		56.7	10.6	16.6	42.1	46.1	-146.2	18.1
25K	35K	DK3		15	1550	PAS11_NOTE.t		56.7	4.5	10.5	36	40	-146.9	18.1
25K	35K	DK4		24	1450	PAS11_NOTE.t		56.7	0.4	6.4	31.9	35.9	-151.1	21.6
25K	35K	DK5		90	400	PAS11_NOTE.t		46.2	1.2	7.2	22.2	26.2	-154.8	32.4
25K	35K	DK6		360	100	PAS11_NOTE.t		56.7	-10.2	-4.2	21.4	25.4	-149.5	18.1

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

Remote Control (TT C) Location(s):

S14a: Street Address: 3400 International Drive			
S14b. City: Washington, D.C.	S14c. County:	S14d. State/Country DC	S14e. Zip Code: 20008
S14f. Telephone Number: 202-944-7701		S14g. Call Sign of Control Station (if appropriate):	

**FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)**

Page 11:
Characteristics and
Certifications

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 1171	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 1311		
S15c. Mass of spacecraft and fuel at launch (kg): 2482	S15f. Length (m): 22.4	S15i. Payload: 0.893
S15d. Mass of fuel, in orbit, at beginning of life (kg): 525	S15g. Width (m): 4.2	S15j. Bus: 0.87
S15e. Deployed Area of Solar Array (square meters): 29.7	S15h. Height (m): 3.3	S15k. Total: 0.777

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a): 4847	(f): 4847	(k): 4465	(p): 4465
Bus (Watts):	(b): 1206	(g): 785	(l): 1148	(q): 756
Total (Watts):	(c): 6053	(h): 5632	(m): 5613	(r): 5221
Solar Array (Watts):	(d): 7256	(i): 6510	(n): 6687	(s): 6147
Depth of Battery Discharge (%):	(e) 75.3 %	(j) %	(o) 75.6 %	(t) %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R § 25.114.