Approved by OMD Control Number 3060-0678
Estimated Burden Hours: 80

FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name:		e. Estimated Date of Placement into Service:	i Will the space station(s) operate on a Common Carrier Basis:
HISPASAT 30W-6		4/15/2017	N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s):	j. Number of transponders offered on a common carrier basis:
9/4/2014		15 Years	
c. Construction Completion Date:		g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth:
9/2/2017		35	MHz
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth)	l. Orbit Type: Mark all boxes that apply:
1/3/2017	6/30/2017	1472 MHz	[X] GSO [ ] 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)		
6725	M	7025	M	R	Fixed Satellite Service
4500	M	4800	M	T	Fixed Satellite Service
13	G	13.25	G	R	Fixed Satellite Service
11.2	G	11.45	G	T	Fixed Satellite Service
13.91	G	14	G	R	Fixed Satellite Service
14	G	14.5	G	R	Inter-Satellite Service
11.7	G	12.2	G	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W):	b. Alternate Orbital Longitude (Degrees E/W):	c. Reason for orbital location selection:
30 W		The satellite network HISPASAT 30W-6 will be located at 30ºW, replacing HISPASAT 30W-4 and adding additional frequency bands.
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.05 Degrees e. Toward East: 0.05 Degrees	f. Inclination Excursion or N/S Station-Keeping Tolerance: 0.07 Degrees	Range of orbital are in which adequate service can be provided (Optional): Degrees E/W g. Westernmost: h. Easternmost:
i. Reason for service are selection (Optional):		

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

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

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

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 intital phase angle.

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

NO NGSO DATA FILED

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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	Service Area C BAND.g	Service Area C BAND
2	S	Service Area KU BAND.	Service Area Ku Band

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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				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noice Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
CUR	R	27.7	17.7	0.05	0.05	30	N	0	1				542	0.39	-100	20	0.8
CUR	R	27.7		0.05	0.05	30	N	90	1				542	0.39	-100	20	0.8
CUT	T	26.4	16.4	0.05	0.05	30	N	0	1	1.3	15	41.4					
CUT	T	26.4	16.4	0.05	0.05	30	N	90	1	1.3	15	41.4					
KUR	R	31.7	21.7	0.05	0.05	30	N	0	2				457	5.1	-100	20	0.5
KUR	R	31.7	21.7	0.05	0.05	30	N	90	2				457	5.1	-100	20	0.5
KUT	T	30.4	20.4	0.05	0.05	30	N	0	2	1.8	18.8	49.2					
KUTV	T	30.4	20.4	0.05	0.05	30	N	90	2	1.8	18.8	49.2					

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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
CUR	R	C	-30		CURH.gxt					
CUR	R	X	-30		CURHxpol.gxt					
CUR	R	C	-30		CURV.gxt					
CUR	R	X	-30		CURVxpol.gxt					
CUT	T	C	-30		CUTH.gxt	-162	-162	-162	-162	-162
CUT	T	X	-30		CUTHxpol.gxt					
CUT	T	C	-30		CUTV.gxt	-162	-162	-162	-162	-162
CUT	T	X	-30		CUTVxpol.gxt					
KUR	R	C	-30		KURH.gxt					
KUR	R	X	-30		KURHxpol.gxt					
KUR	R	C	-30		KURV.gxt					
KUR	R	X	-30		KURVxpol.gxt					
KUT	T	C	-30		KUTH.gxt	-128	-128	-128	-128	-128
KUT	T	X	-30		KUTHxpol.gxt					
KUTV	T	C	-30		KUTV.gxt	-128	-128	-128	-128	-128
KUTV	T	X	-30		KUTVxpol.gxt					

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S9. SPACE STATION CHANNELS For each frequency channel 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)
CR1	54000	R	6755	H	C
CR2	54000	R	6815	H	C
CR3	54000	R	6875	H	C
CR4	54000	R	6935	H	C
CR5	54000	R	6995	H	C
CR6	54000	R	6755	V	C
CR7	54000	R	6815	V	C
CR8	54000	R	6875	V	C
CR9	54000	R	6935	V	C
CR10	54000	R	6995	V	C
CT1	54000	T	4532.5	V	C
CT2	54000	T	4592.5	V	C
CT3	54000	T	4652.5	V	C
CT4	54000	T	4712.5	V	C
CT5	54000	T	4772.5	V	C
CT6	54000	T	4532.5	H	C
KR11	36000	R	13180	V	C
KR12	36000	R	13220	V	C
KR13	36000	R	13932	H	C
KR14	36000	R	13972	H	C
KR15	36000	R	13932	V	C
KR16	36000	R	13972	V	C
KR17	36000	R	14286	V	C
KR18	36000	R	14337	V	C
KR19	50000	R	14466	V	C
KR20	36000	R	14031	H	C
KR21	36000	R	14071	H	C
KR22	36000	R	14111	H	C
KR23	36000	R	14151	H	C
KR24	36000	R	14191	H	C

S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
1	125.5	CR1	CURH	CT1	CUTV
2	125.5	CR2	CURH	CT2	CUTV
3	125.5	CR3	CURH	CT3	CUTV
4	125.5	CR4	CURH	CT4	CUTV
5	125.5	CR5	CURH	CT5	CUTV
6	125.5	CR6	CURV	CT6	CUTH
7	125.5	CR7	CURV	CT7	CUTH
8	125.5	CR8	CURV	CT8	CUTH
9	125.5	CR9	CURV	CT9	CUTH
10	125.5	CR10	CURV	CT10	CUTH
11	127.7	KR1	KURH	KT11	KUTV
12	127.7	KR2	KURH	KT12	KUTV
13	127.7	KR3	KURH	KT13	KUTV
14	127.7	KR4	KURH	KT14	KUTV
15	127.7	KR5	KURH	KT15	KUTV
16	127.7	KR6	KURH	KT16	KUTV
17	127.7	KR7	KURV	KT7	KUTH
18	127.7	KR8	KURV	KT8	KUTH
19	127.7	KR9	KURV	KT9	KUTH
20	127.7	KR10	KURV	KT10	KUTH
21	127.7	KR11	KURV	KT11	KUTH
22	127.7	KR12	KURV	KT12	KUTH
23	127.7	KR13	KURH	KT13	KUTV
24	127.7	KR14	KURH	KT14	KUTV
25	127.7	KR15	KURV	KT15	KUTH
26	127.7	KR16	KURV	KT16	KUTH
27	127.7	KR17	KURV	KT17	
28	127.7	KR18	KURV	KT18	
29	127.7	KR19	KURV	KT19	
30	127.7	KR20	KURH	KT20	KUTV

KR25	36000	R	14231	H	C
KT1	36000	T	11220	V	C
KT2	36000	T	11260	V	C
KT3	36000	T	11300	V	C
KT4	36000	T	11340	V	C
KT5	36000	T	11380	V	C
KT6	36000	T	11420	V	C
KT7	36000	T	11220	H	C
KT8	36000	T	11260	H	C
KT9	36000	T	11300	H	C
KT10	36000	T	11340	H	C
KT11	36000	T	11380	H	C
KT12	36000	T	11420	H	C
KT13	36000	T	12132	V	C
KT14	36000	T	12172	V	C
KT15	36000	T	12132	H	C
KT16	36000	T	12172	H	C
KT17	36000	T	11486	H	C
KT18	36000	T	11537	H	C
KT19	36000	T	11666	H	C
KT20	50000	T	11724	V	C
KT21	36000	T	11764	V	C
KT22	36000	T	11804	V	C
KT23	36000	T	11844	V	C
KT24	36000	T	11884	V	C
KT25	36000	T	11924	V	C
CT7	54000	T	4592.5	H	C
CT8	54000	T	4652.5	H	C
CT9	54000	T	4712.5	H	C
CT10	54000	T	4772.5	H	C
KR1	36000	R	13020	H	C
KR2	36000	R	13060	H	C
KR3	36000	R	13100	H	C
KR4	36000	R	13140	H	C
KR5	36000	R	13180	H	C
KR6	36000	R	13220	H	C
KR7	36000	R	13020	V	C
KR8	36000	R	13060	V	C
KR9	36000	R	13100	V	C

31	127.7	KR21	KURH	KT21	KUTV
32	127.7	KR22	KURH	KT22	KUTV
33	127.7	KR23	KURH	KT23	KUTV
34	127.7	KR24	KURH	KT24	KUTV
35	127.7	KR25	KURH	KT25	KUTV

KR10	36000	R	13140	V	C

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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)
1	60K0G7W	70	8	64	0.67		8	20.2
2	1M50G7W	1700	8	2048	0.67		8	20.2
3	6M80G7W	7500	4	8448	0.75		9	21.2
4	33M0G7W	36000	4	45000	0.875		7.4	19.6
5	1M50G7W	1800	4	2048	0.75		9	17.7
6	36M0G7W	36000	4	38010	0.75		6.1	18.3
7	7M89G7W	9000	8	11300	0.67		8	20.2
8	14K0G7W	14	4	11000	0.5		6.8	19

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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						

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

Associated Transponder ID Range		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)			
								(i)Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
(a) Start	(b) End	(c) Digital (Table S11)	(d) Analog (Table S12)						(j) Min.	(k) Max.	(l) Min.	(m) Max.		
1	10	1		800		link_budget_1.p		47	-8	2	4	10	-164.5	24.5
1	10	1		318		link_budget_2.p		47	-4	6	9	15	-159.5	18.9
1	10	2		30		link_budget_3.p		47	6.2	16.2	18	24	-167.3	24.5
1	10	2		10		link_budget_4.p		47	11	21	21	27	-161.3	18.9
27	35	5		18		link_budget_7.p		53	-0.5	9.5	28.7	34.7	-129.9	30
27	35	8		3850		link_budget_8.p		44	-19	-9	2	5.7	-137.8	31
27	35	8		2340		link_budget_8.p		44	-19	-9	2	5.7	-137.8	31
27	35	8		3330		link_budget_9.p		49.2	-19.4	-9.4	3.4	9.4	-134	26.3
27	35	8		2340		link_budget_9.p		49.2	-19.4	-9.4	3.4	9.4	-134	26.3
23	26	6		1		link_budget_10.		53	13	23	38.6	44.6	-157	26.3
11	22	7		4		link_budget_11.		53	5.1	15.1	31.6	37.6	-160	30
1	10	3		5		link_budget_5.p		47	14	24	25.7	31.7	-163	24.5
1	10	4		1		link_budget_6.p		47	17	27	28.8	34.8	-166.7	30

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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: CARRETERA M 220, KM 1,800			
S14b. City: ARGANDA DEL REY	S14c. County: SPAIN	S14d. State/Country	S14e. Zip Code: 28500
S14f. Telephone Number: +34918700160	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address: PRAIA DO FLAMENGO 200			
S14b. City: RIO DE JANEIRO	S14c. County: BRAZIL	S14d. State/Country	S14e. Zip Code: 22210-030
S14f. Telephone Number: +552198582255	S14g. Call Sign of Control Station (if appropriate):		

Remote Control (TT C) Location(s):

S14a: Street Address:			
S14b. City:	S14c. County:	S14d. State/Country	S14e. Zip Code:
S14f. Telephone Number:	S14g. Call Sign of Control Station (if appropriate):		

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 2623	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 3469		
S15c. Mass of spacecraft and fuel at launch (kg): 6092	S15f. Length (m): 26.088	S15i. Payload: 0.766
S15d. Mass of fuel, in orbit, at beginning of life (kg): 730	S15g. Width (m): 8.932	S15j. Bus: 0.8622
S15e. Deployed Area of Solar Array (square meters): 74.27	S15h. Height (m): 6.923	S15k. Total: 0.6399

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): 11798	(f): 11798	(k): 10568	(p): 10568
Bus (Watts):	(b): 2585	(g): 1416	(l): 2576	(q): 1406
Total (Watts):	(c): 14383	(h): 13214	(m) 13144	(r): 11974
Solar Array (Watts):	(d): 17979	(i): 16004	(n): 16112	(s): 14475
Depth of Battery Discharge (%):	(e) %	(j) 73 %	(o) %	(t) 66 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:	X	**YES**		**NO**		**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?	X	**YES**		**NO**		**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?	X	**YES**		**NO**		**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.

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting estimate for this collection of information includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PERM@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.