

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
(Technical and Operational Description)**S1. GENERAL INFORMATION** Complete for all satellite applications.

a. Space Station or Satellite Network Name: USASAT 30C - WorldView-4	e. Estimated Date of Placement into Service: 11/01/2016	i. Will the space station(s) operate on a Common Carrier basis? ☐ YES ☒ NO
b. Construction Commencement Date: 3/25/2010	f. Estimated Lifetime of Satellite(s): 7 Years	j. Number of transponders offered on a Common Carrier basis: 0
c. Construction Completion Date: 3/13/2013	g. Total Number of Transponders: 0	k. Total Common Carrier Transponder Bandwidth: 0 MHz
d. Estimated Launch Date: 9/15/2016	h. Total Transponder Bandwidth (No. Transponders x Bandwidth): 0 MHz	l. Orbit Type: Mark all boxes that apply. ☐ GSO ☒ NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will operate.
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)		
8025	M	8400	M	T	Earth exploration satellite service
2051.342	M	2052.658	M	R	Earth exploration satellite service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

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

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System: 5

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

S4b. Total Number of Orbital Planes in Network or System: 5

S4d. Orbit Epoch Date: 2016/09/01

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satel- lites 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
WV-4 min 1:30 PM 1		97.36	5671	521	506	2.863	90			
WV-4 nom 1:30 PM 1		97.83	5823	643	628	2.863	90			
WV-4 max 1:30 PM 1		98.45	6013	795	780	2.863	90			
WV-4 min 10:30 AM 1		97.36	5671	521	506	317.866	90			
WV-4 nom 10:30 AM 1		97.83	5823	643	628	317.866	90			
WV-4 max 10:30 AM 1		98.45	6013	795	780	317.866	90			
Note: The final orbit selection for WorldView-4 has not yet been made. The altitude will be between										
the min and max values shown; and the LMST will be will either be 10:30 AM or 1:30 PM. The "nominal"										
rows represent the current reference baseline but is subject to change.										

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

Page 3: Service Areas

[illegible]

Page 4: Antenna Beams

[illegible]

Page 5: Beam Diagrams

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.

[illegible]

*Use a Reference Bandwidth of 4 kHz or 1 MHz as appropriate to the FCC Rules that apply to the subject frequency band (§ 25.208).

Page 6: Channels and Transponders

S10. SPACE STATION TRANSPONDERS** For each transponder provide:

[illegible]

**Also complete this table for half-links such as TT&C and on-board processing. In such cases, provide the receive or transmit information, as appropriate.

Page 7: Digital Modulation

Page 8: Analog Modulation

S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

[illegible]

*Indicate whether signal is (a) FDM/FM, (b) CSSB/AM, (c) SCPC/FM, or (d) TV/FM.
Rev 4d, June 19, 2003, 5:45 pm

Page 9: Typical Emissions

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

[illegible]

* For those emissions using energy dispersal, provide the bandwidth of the energy dispersal. Otherwise, leave blank.

**Use a Reference Bandwidth of 4 kHz or 1 MHz as appropriate to the FCC Rules that apply to the subject frequency band (§ 25.208).

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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&C control point(s).

☒ YES ☐ NO

Remote Control (TT&C) Location(s):

S14a. Street Address DigitalGlobe MCC: 1601 Dry Creek Drive, Suite 260			
S14b. City Longmont	S14c. County Boulder	S14d. State / Country CO	S14e. Zip Code 80503
S14f. Telephone Number 303-684-4000		S14g. Call Sign of Control Station (if appropriate) None	

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

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

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

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

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) 1969	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel & disposables at launch (kg) 454		
S15c. Mass of spacecraft and fuel at launch (kg) 2423	S15f. Length (m) 7.73	S15i. Payload 0.92
S15d. Mass of fuel, in orbit, at beginning of life (kg) 454	S15g. Width (m) 7.73	S15j. Bus 0.76
S15e. Deployed Area of Solar Array (square meters) 16	S15h. Height (m) 5.33	S15k. Total 0.70

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)	297	(f) 297	(k) 297	(p) 297
Bus (Watts) (b)	1065	(g) 1065	(l) 1065	(q) 1065
Total (Watts) (c)	1362	(h) 1362	(m) 1362	(r) 1362
Solar Array (Watts) (d)	3670	(i) 3817	(n) 3494	(s) 3641
Depth of Battery Discharge (%) (e)	14 %	(j) 14 %	(o) 17 %	(t) 17 %

S17. CERTIFICATIONS

a. Are the power flux density limits of § 25.208 met?	☒ 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?	☐ 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?	☒ 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.			