

File Number: **DRAFT-SAT-AMD-20260120-00032**

Call Sign: **S00733**

S1. Satellite Information

a. Space Station or Satellite Network Name	b. Orbit Type	c. Estimated Operational Lifetime of Space Station(s) From Date of Launch (yrs)	d. Will the space station(s) operate on a Common Carrier basis?	e. Application Description
FLIP	Non-Geostationary (NGSO) Small Satellites or Small Spacecraft	1	No	Astrolab seeks authority to launch and operate its FLEX Lunar Innovation Platform ("FLIP") rover, a sub-scale rover technology demonstration mission on the Moon's surface.

S2. Operating Frequency Bands

a. Type of Service	b. If a. is Other, provide a service description	c. Satellite Frequency Band (MHz)	d. Satellite Frequency (Lower Band Edge) (MHz)	e. Satellite Frequency (Upper Band Edge) (MHz)	f. Direction of Transmission	g. Non Conforming Indicator
SOS		2200 - 2290	2200	2290	Space-to-Earth (Transmit)	No
OTHER: Other Satellite Service	ISM	Other	2400	2483.5	Space-to-Space (Transmit)	Yes
SOS		2025 - 2110	2025	2110	Earth-to-Space (Receive)	No
OTHER: Other Satellite Service	ISM	Other	2400	2483.5	Space-to-Space (Receive)	Yes
SRS		8450 - 8500	8450	8500	Space-to-Earth (Transmit)	No

S3. NGSO Orbital Information

a. Total Number of Simultaneously Operating Satellites in Constellation	b. Total Number of Satellites Deployed During the License Term	c. Orbit Epoch Date	d. Celestial Reference Body	e. If d. is "Other", provide the name of celestial body being referenced	f. Total Number of Orbital Planes
0	1	2025-12-04	Moon		0

g. Orbital Plane Information

h. Initial Phase Angle Information

S4. Earth-to-Space (Receive) Beams

a. Beam ID:	SUB	n. Beam Peak Flux Density at Command Threshold (dBW/m²):	
b. Beam Frequency (Lower Band Edge) (MHz):	2025	o. Peak Isotropic Antenna Gain (dBi):	3
c. Beam Frequency (Upper Band Edge) (MHz):	2110	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):	
d. Polarization:	RHCP	q. Antenna Pointing Error (°):	
e. Can the space station vary the channel bandwidth with on-board processing?:	No	r. Antenna Rotational Error (°):	
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:	

g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:				
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:				
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:				
j. Maximum G/T (dB/K):	-22.8	w. What information will be provided with the predicted antenna gain contours?:				
k. Minimum G/T (dB/K):						
l. Maximum Saturation Flux Density (dBW/m²):						
m. Minimum Saturation Flux Density (dBW/m²):						
x. Receive Channels						
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication
SUB1	3.7	2069.135	2067.285	2070.985	TT&C	

a. Beam ID:	SUA	n. Beam Peak Flux Density at Command Threshold (dBW/m²):				
b. Beam Frequency (Lower Band Edge) (MHz):	2025	o. Peak Isotropic Antenna Gain (dBi):	1			
c. Beam Frequency (Upper Band Edge) (MHz):	2110	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):				
d. Polarization:	RHCP	q. Antenna Pointing Error (°):				
e. Can the space station vary the channel bandwidth with on-board processing?:	No	r. Antenna Rotational Error (°):				
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:				
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:				
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:				
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:				
j. Maximum G/T (dB/K):	-24.8	w. What information will be provided with the predicted antenna gain contours?:				
k. Minimum G/T (dB/K):						
l. Maximum Saturation Flux Density (dBW/m²):						
m. Minimum Saturation Flux Density (dBW/m²):						
x. Receive Channels						
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication
SUA1	3.7	2069.135	2067.285	2070.985	TT&C	

S5. Space-to-Earth (Transmit) Beams

a. Beam ID:	SDB	n. Beam Peak Flux Density at Command Threshold (dBW/m²):	
b. Beam Frequency (Lower Band Edge) (MHz):	2200	o. Peak Isotropic Antenna Gain (dBi):	2
c. Beam Frequency (Upper Band Edge) (MHz):	2290	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):	
d. Polarization:	RHCP	q. Antenna Pointing Error (°):	
e. Can the space station vary the channel bandwidth with on-board processing?:	No	r. Antenna Rotational Error (°):	
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:	
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:	
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:	
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:	
j. Maximum Transmit EIRP Density (dBW/Ref BW):	-55.7	w. What information will be provided with the predicted antenna gain contours?:	

k. Maximum Transmit EIRP (dBW):			10										
x. Transmit Channels													
(i) Channel ID		(ii) Channel Bandwidth (MHz)		(iii) Center Frequency (MHz)		(iv) Channel Frequency (Lower Band Edge) (MHz)		(v) Channel Frequency (Upper Band Edge) (MHz)		(vi) Channel Type		(vii) Point of Communication	
SDB1		3.7		2247.024869		2245.174869		2248.874869		TT&C			
y. Max. Power-Flux Densities													
			Angles of Arrival PFD						Geographic Region PFD				
(i) Beam Sub-Frequency (Lower Band Edge) (MHz)	(ii) Beam Sub-Frequency (Upper Band Edge) (MHz)	(iii) Reference Bandwidth (BW)	(iv) 0-2° (dBW/m²/BW)	(v) 2-5° (dBW/m²/BW)	(vi) 5-15° (dBW/m²/BW)	(vii) 15-20° (dBW/m²/BW)	(viii) 20-25° (dBW/m²/BW)	(ix) 25-90° (dBW/m²/BW)	(x) Southeastern Region (dBW/m²/BW)	(xi) Northeastern Region (dBW/m²/BW)	(xii) Western Region (dBW/m²/BW)	(xiii) Other Region (dBW/m²/BW)	(xiv) Energy Dispersal Bandwidth (kHz)
		4 kHz	-203	-203	-202.9	-202.9	-202.9	-202.8					

a. Beam ID:	SDA	n. Beam Peak Flux Density at Command Threshold (dBW/m²):											
b. Beam Frequency (Lower Band Edge) (MHz):	2200	o. Peak Isotropic Antenna Gain (dBi):	2										
c. Beam Frequency (Upper Band Edge) (MHz):	2290	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):											
d. Polarization:	RHCP	q. Antenna Pointing Error (°):											
e. Can the space station vary the channel bandwidth with on-board processing?:	No	r. Antenna Rotational Error (°):											
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:											
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:											
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:											
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:											
j. Maximum Transmit EIRP Density (dBW/Ref BW):	-55.7	w. What information will be provided with the predicted antenna gain contours?:											
k. Maximum Transmit EIRP (dBW):	10												
x. Transmit Channels													
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication							
SDA1	3.7	2247.024869	2245.174869	2248.874869	TT&C								
y. Max. Power-Flux Densities													
			Angles of Arrival PFD				Geographic Region PFD						
(i) Beam Sub-Frequency (Lower Band Edge) (MHz)	(ii) Beam Sub-Frequency (Upper Band Edge) (MHz)	(iii) Reference Bandwidth (BW)	(iv) 0-2° (dBW/m²/BW)	(v) 2-5° (dBW/m²/BW)	(vi) 5-15° (dBW/m²/BW)	(vii) 15-20° (dBW/m²/BW)	(viii) 20-25° (dBW/m²/BW)	(ix) 25-90° (dBW/m²/BW)	(x) Southeastern Region (dBW/m²/BW)	(xi) Northeastern Region (dBW/m²/BW)	(xii) Western Region (dBW/m²/BW)	(xiii) Other Region (dBW/m²/BW)	(xiv) Energy Dispersal Bandwidth (kHz)
		4 kHz	-161.5	-160.8	-158.3	-157.2	-156.2	-150.7					

a. Beam ID:	XD1	n. Beam Peak Flux Density at Command Threshold (dBW/m²):	
b. Beam Frequency (Lower Band Edge) (MHz):	8450	o. Peak Isotropic Antenna Gain (dBi):	4
c. Beam Frequency (Upper Band Edge) (MHz):	8500	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):	
d. Polarization:	RHCP	q. Antenna Pointing Error (°):	
e. Can the space station vary the channel bandwidth with on-board processing?:	No	r. Antenna Rotational Error (°):	
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:	
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:	
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:	
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:	

j. Maximum Transmit EIRP Density (dBW/Ref BW):	-55	w. What information will be provided with the predicted antenna gain contours?:											
k. Maximum Transmit EIRP (dBW):	12												
x. Transmit Channels													
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication							
XD1	5	8455	8452.5	8457.5	Service Link								
y. Max. Power-Flux Densities													
			Angles of Arrival PFD						Geographic Region PFD				
(i) Beam Sub-Frequency (Lower Band Edge) (MHz)	(ii) Beam Sub-Frequency (Upper Band Edge) (MHz)	(iii) Reference Bandwidth (BW)	(iv) 0-2° (dBW/m²/BW)	(v) 2-5° (dBW/m²/BW)	(vi) 5-15° (dBW/m²/BW)	(vii) 15-20° (dBW/m²/BW)	(viii) 20-25° (dBW/m²/BW)	(ix) 25-90° (dBW/m²/BW)	(x) Southeastern Region (dBW/m²/BW)	(xi) Northeastern Region (dBW/m²/BW)	(xii) Western Region (dBW/m²/BW)	(xiii) Other Region (dBW/m²/BW)	(xiv) Energy Dispersal Bandwidth (kHz)
		4 kHz	-201.8	-201.8	-201.8	-201.8	-201.7	-201.7					

S6. Space-to-Space (Receive) Beams

a. Beam ID:	ISMR	n. Beam Peak Flux Density at Command Threshold (dBW/m²):				
b. Beam Frequency (Lower Band Edge) (MHz):	2400	o. Peak Isotropic Antenna Gain (dBi):	2			
c. Beam Frequency (Upper Band Edge) (MHz):	2483.5	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):				
d. Polarization:	V	q. Antenna Pointing Error (°):				
e. Can the space station vary the channel bandwidth with on-board processing?:	No	r. Antenna Rotational Error (°):				
f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:				
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:				
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:				
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:				
j. Maximum G/T (dB/K):	-24	w. What information will be provided with the predicted antenna gain contours?:				
k. Minimum G/T (dB/K):						
l. Maximum Saturation Flux Density (dBW/m²):						
m. Minimum Saturation Flux Density (dBW/m²):						
x. Receive Channels						
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication
ISM1	20	2462	2452	2472	TT&C	

S7. Space-to-Space (Transmit) Beams

a. Beam ID:	ISMT	m. Beam Peak Flux Density at Command Threshold (dBW/m²):	
b. Beam Frequency (Lower Band Edge) (MHz):	2400	o. Peak Isotropic Antenna Gain (dBi):	2
c. Beam Frequency (Upper Band Edge) (MHz):	2483.5	p. Isotropic Antenna Gain at 3 dB Beamwidth (dBi):	60
d. Polarization:	V	q. Antenna Pointing Error (°):	
e. Can the space station vary the channel bandwidth with on-board processing?:	No	r. Antenna Rotational Error (°):	

f. Is this a command beam? (Check box if Yes):	No	s. Will a GIMS container file containing all antenna contour data be provided?:
g. Is the beam shapeable? (Check box if Yes):	No	t. Under what rules will the associated antenna contours be submitted?:
h. Is the beam steerable? (Check box if Yes):	No	u. Provide a list of each orbital plane in which this antenna beam is used.:
i. Is the beam fed into transponders? (Check box if Yes):	No	v. Are all space stations in the NGSO constellation identical?:
j. Maximum Transmit EIRP Density (dBW/Ref BW):	-69	w. What information will be provided with the predicted antenna gain contours?:
k. Maximum Transmit EIRP (dBW):	4	

x. Transmit Channels						
(i) Channel ID	(ii) Channel Bandwidth (MHz)	(iii) Center Frequency (MHz)	(iv) Channel Frequency (Lower Band Edge) (MHz)	(v) Channel Frequency (Upper Band Edge) (MHz)	(vi) Channel Type	(vii) Point of Communication
ISM2	20	2462	2452	2472	TT&C	

S8. Attachments