



312 File Number: **SATLOA2025031000067**

Filing Description

Question	Response
Description	Basalt seeks authority for three smallsats to test artificial intelligence capabilities in space using UHF and S-band.

**Satellite
Information**

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	Spirit-EEL
Estimated Lifetime of Satellite(s) From Date of Launch	6 Years
Will the space station(s) operate on a Common Carrier basis?	No

**Operating
Frequency
Bands (6)**

Nature of service	Description	Frequency Band(s)	Mode Type
Space Operation Service		2200.0 MHz -2290.0 MHz	Transmit
Earth Exploration-Satellite Service		2200.0 MHz -2290.0 MHz	Transmit
Space Operation Service		2025.0 MHz -2110.0 MHz	Receive
Earth Exploration-Satellite Service		2025.0 MHz -2110.0 MHz	Receive
Space Operation Service		401.0 MHz -402.0 MHz	Transmit
Mobile-Satellite Service		399.9 MHz -400.05 MHz	Receive

**Orbital
Information For
Non-
Geostationary
Satellites**

Question	Response
Total Number of Satellites in the active constellation	3
Orbit Epoch Date	10/01/2025
Celestial Reference Body	Earth

Orbital Plane 1:

Question	Response
Number of Satellites in Plane	3
Inclination Angle	97.45 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5697.0 seconds
Apogee	510.0 km
Perigee	510.0 km
Active Service Arc Begin Angle with respect to Ascending Node	-90.0 degrees
Active Service Arc End Angle with respect to Ascending Node	90.0 degrees

Mean Anomaly For Each Satellite

Satellite Number	Mean Anomaly (degrees) at the Orbit Epoch Date
1	0.0
2	0.0
3	0.0

Receiving Beams 1:

Question	Response
Beam ID	UR1
Receive Beam Frequency	399.9 MHz -400.05 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.0 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-24.6 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving Beams 2:

Question	Response
Beam ID	SR1
Receive Beam Frequency	2025.0 MHz -2110.0 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.0 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	

Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-17.6 dB/K
Min. Saturation Flux Density	-0.1 dBW/m2
Max. Saturation Flux Density	0.0 dBW/m2
Co- or Cross Polar Mode	C
Service Area Description	Global

Receiving
Channels (4)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
SR1B	0.22	2074.3	TT&C
UR1B	0.009	400.0375	TT&C
SR1A	0.22	2074.3	Service Link
UR1A	0.009	400.0375	Service Link

Transmitting
Beams 1:

Question	Response
Beam ID	UT1
Transmit Beam Frequency	401.0 MHz -402.0 MHz
Beam Type	Fixed
Polarization	H
Peak Gain	dBi
Antenna Pointing Error	0.0 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-36.9 dBW/Hz
Max. Transmit EIRP	3.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Global

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²	(dBW/m ²
* BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
4.0 kHz	-138.3	-136.6	-135.0	-133.5	-132.3	-126.0

Transmitting
Beams 2:

Question	Response
Beam ID	ST1
Transmit Beam Frequency	2200.0 MHz -2290.0 MHz
Beam Type	Fixed

Polarization	RHCP
Peak Gain	dBi
Antenna Pointing Error	0.0 degrees
Antenna Rotational Error	0.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-55.9 dBW/Hz
Max. Transmit EIRP	10.0 dBW
Co- or Cross Polar Mode	C
Service Area Description	Outside US

Max. Power Flux Density

	* 0° - 5°	* 5° - 10°	* 10° - 15°	* 15° - 20°	* 20° - 25°	* 25° - 90°
* BW:	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):	(dBW/m ² /BW):
4.0 kHz	-157.3	-155.6	-154.0	-152.5	-151.3	-145.0

Transmitting
Channels (3)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
ST1B	0.039	2268.8	TT&C
ST1A	0.039	2268.8	Service Link
UT1	0.01	401.2	Service Link

Certification Questions

Question	Response
Are the applicable service area coverage requirements of 25.143(b)(2) (ii) and (iii), or 25.144(a)(3)(i), or 25.145 (c)(1) and (2), or 25.146(i)(1) and (2), or 25.148(c), or 25.225 met?	N/A
Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met?	Yes
Are the cessation of emissions requirements of 25.207 met?	Yes
Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?	
For NGSO applications, are the applicable equivalent-power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?	N/A
Are the applicable full-frequency-reuse requirements of 25.210 met?	
If the application is for a 17/24 GHz BSS space station, will it be operated at an offset location with full power and interference protection in accordance with 25.262(b)?	

Attachments

Information not provided.