



312 File Number: **SESSTA2020081100859**

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## Filing Description

Question	Response
Description	ELSA-D Servicer for RPO Mission

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**Satellite  
Information**

Question	Response
Select Orbit Type	NGSO
Space Station or Satellite Network Name	ELSA-D Servicer
Estimated Lifetime of Satellite(s) From Date of Launch	2 Years
Will the space station(s) operate on a Common Carrier basis?	No

## Operating Frequency Bands (3)

Nature of service	Description	Frequency Band(s)	Mode Type
Space Research Service		8450.0 MHz -8500.0 MHz	Transmit
Space Operation Service		2025.0 MHz -2110.0 MHz	Receive
Space Operation Service		2200.0 MHz -2290.0 MHz	Transmit

**Orbital  
Information For  
Non-  
Geostationary  
Satellites**

Question	Response
Total Number of Satellites in the active constellation	1
Orbit Epoch Date	01/01/2021
Celestial Reference Body	Earth

## Orbital Plane 1:

Question	Response
Number of Satellites in Plane	1
Inclination Angle	98.0 degrees
Right Ascension of Ascending Node	0.0 degrees
Argument of Perigee	0.0 degrees
Orbital Period	5820.0 seconds
Apogee	550.0 km
Perigee	550.0 km
Active Service Arc Begin Angle with respect to Ascending Node	0.0 degrees
Active Service Arc End Angle with respect to Ascending Node	180.0 degrees

### Mean Anomaly For Each Satellite

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

## Receiving Beams 1:

Question	Response
Beam ID	USC2
Receive Beam Frequency	2094.85 MHz -2095.15 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	2.0 dBi
Antenna Pointing Error	1.0 degrees
Antenna Rotational Error	1.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
G/T at Max. Gain Point	-26.4 dB/K
Min. Saturation Flux Density	-91.2 dBW/m <sup>2</sup>
Max. Saturation Flux Density	-79.1 dBW/m <sup>2</sup>
Co- or Cross Polar Mode	C
Service Area Description	Global

**Receiving  
Channels (2)**

<b>Channel ID</b>	<b>Channel Bandwidth (MHz)</b>	<b>Center Frequency s (MHz)</b>	<b>Feeder Link, Service Link or TT&amp;C</b>
<b>US22</b>	0.004	2095.0	TT&C
<b>US21</b>	0.1	2095.0	TT&C

## Transmitting Beams 1:

Question	Response
Beam ID	DST3
Transmit Beam Frequency	2274.77 MHz -2275.23 MHz
Beam Type	Fixed
Polarization	RHCP
Peak Gain	2.0 dBi
Antenna Pointing Error	1.0 degrees
Antenna Rotational Error	1.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-58.8 dBW/Hz
Max. Transmit EIRP	0.0 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 <sup>2</sup>					
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>4.0 kHz</b>	-160.7	-159.1	-157.5	-156.1	-154.9	-148.7

## Transmitting Beams 2:

Question	Response
Beam ID	DXM
Transmit Beam Frequency	8465.0 MHz -8475.0 MHz

Beam Type	Fixed
Polarization	RHCP
Peak Gain	6.1 dBi
Antenna Pointing Error	1.0 degrees
Antenna Rotational Error	1.0 degrees
Polarization Switchable	
Polarization Alignment Relative to the Equatorial Plane	45.0 degrees
Max. Transmit EIRP Density	-59.4 dBW/Hz
Max. Transmit EIRP	6.41 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 <sup>2</sup>					
BW:	/BW):	/BW):	/BW):	/BW):	/BW):	/BW):
<b>4.0 kHz</b>	-164.6	-163.0	-161.4	-160.0	-158.8	-152.6

## Transmitting Channels (3)

Channel ID	Channel Bandwidth (MHz)	Center Frequency s (MHz)	Feeder Link, Service Link or TT&C
DS32	0.016	2275.0	TT&C
DS31	0.256	2275.0	TT&C
DXM1	8.333	8470.0	Service Link

## Certification Questions

Question	Response
<p>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?</p>	<p>N/A</p>
<p>Are the applicable frequency tolerances of 25.202(e) and out-of-band emission limits of 25.202(f)(1),(2), and (3) met?</p>	<p>Yes</p>
<p>Are the cessation of emissions requirements of 25.207 met?</p>	<p>Yes</p>
<p>Are the applicable power-flux-density limits of 25.208 met, and is the appropriate technical showing provided within the application?</p>	
<p>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?</p>	<p>N/A</p>
<p>Are the applicable full-frequency-reuse requirements of 25.210 met?</p>	
<p>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)?</p>	

## Attachments

File Name	Beam	Field	Attachment Type	Description
<u>ELSA-D_Servicer - GIMS.mdb</u>		NGSO Antenna Gain Data	GIMS file (*.mdb)	GIMS Container with all GXT Files for the ELSA-D - Servicer filing