

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
Special Temporary Authority for Clifton IOT antenna

1. Applicant

Name:	GUSA Licensee LLC	Phone Number:	408-933-4525
DBA Name:		Fax Number:	408-933-4960
Street:	461 S. Milpitas Boulevard	E-Mail:	tony.navarra@globalstar.com
City:	Milpitas	State:	CA
Country:	USA	Zipcode:	95035
Attention:	Mr Anthony J Navarra		



File # SES-STA-20100922-01189

Call Sign E030266 Grant Date 10/14/10
(or other identifier)

Term Dates
From 10/18/10 To: +60days

Approved: Talkin Meds
Chief, Satellite Eng'g Br.

"with conditions"

Attachment to Grant
GUSA Licensee LCC
IBFS File No. SES-STA-20100922-01189 (Call Sign: E030266)

The request of GUSA Licensee LLC for special temporary authority IS GRANTED. GUSA Licensee LLC is authorized, for a period of 60 days, commencing on October 18, 2010, to operate the Clifton earth station (Call Sign E030266) in the 1610-1618.725 MHz (Earth-to-space) and 2483.5-2500 MHz (space-to-Earth) frequency bands for test communications with HIBLEO-X satellites, in accordance with the technical parameters specified in the application and subject to the following additional conditions.

1. All operations pursuant to this authorization shall be on an unprotected and non-harmful interference basis. Operations shall not cause harmful interference to, and GUSA Licensee LLC shall not claim protection from interference caused by, any other lawfully operating station. In the event that harmful interference results, operations shall cease immediately upon notification of such interference, and GUSA Licensee LLC shall immediately inform the Commission in writing of such event.
2. Operation must comply with the following conditions:
 - a) the time and manner of station operation shall be restricted as necessary to prevent harmful interference with Iridium uplink and/or downlink reception;
 - b) the Iridium system licensee must receive at least 48 hours advance notice of the time and duration of the station's transmissions, and such notice shall provide the Iridium system licensee with information for establishing immediate telephone contact with Globalstar system officials with authority to terminate the transmissions.
3. No authority for commercial operation is granted herein.
4. This action is without prejudice to disposition of the request in IBFS File No. SES-AFS-20091221-01601.



"With Conditions"

File # SES-STA-20100922-01189

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(or other identifier)

Term Dates
From 10/18/10 To: +60 days

Approved: *Ralph M. Jones*
Chief, Satellite Engng Br.

2. Contact	
Name: Paul A. Monte	Phone Number: 408-933-4521
Company: Globalstar	Fax Number: 408-933-4904
Street: 461 S. Milpitas Boulevard	E-Mail: paul.monte@globalstar.com
City: Milpitas	State: CA
Country: USA	Zipcode: 95035 -
Attention: Mr. Paul A. Monte	Relationship: Same
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number SESAFS2009122101601 or Submission ID	
4a. Is a fee submitted with this application?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R., Section 1.1114).	
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee	
<input type="radio"/> Other (please explain):	
4b. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station	
5. Type Request	
<input checked="" type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input type="radio"/> Other	
6. Requested Use Prior Date	
10/18/2010	
7. City/Clifton	
8. Latitude (dd mm ss.s h) 31 48 2.1 N	

9. State TX	10. Longitude (dd mm ss.s h) 97 36 46.0 W
11. Please supply any need attachments. Attachment 1: Exhibit 1	Attachment 2: Exhibit 2 Attachment 3: Exhibit 3
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)	<p>GUSA Licensee LLC is applying for special temporary authority to operate an earth station antenna in Clifton, TX, for constellation maintenance and station#8722;keeping. The satellite manufacturer needs to begin the testing of service link transponder of the satellites to affirm the post-launch health to verify the performance of the individual</p>
13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes.	<p>Yes <input checked="" type="radio"/> No <input type="radio"/></p>
14. Name of Person Signing Mr. Anthony Navarra	15. Title of Person Signing President
<p>WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).</p>	

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12. Description

GUSA Licensee LLC is applying for special temporary authority to operate an earth station antenna in Clifton, TX, for constellation maintenance and station#8722;keeping. The satellite manufacturer needs to begin the testing of service link transponder of the satellites to affirm the post-launch health to verify the performance of the individual Globalstar satellites.

Special Temporary Authority Request

Exhibit 3: Summary of IOT Earth Station Technical Information

Date submitted: September 22, 2010
Applicant: GUSA Licensee LLC
File Nos.: SES-AFS-20091221-01601 (for E030266)
Call Signs: E030266

Purpose of STA:

GUSA Licensee LLC ("GUSA") is seeking Special Temporary Authority to operate the IOT ("In-Orbit Test") antenna located at Clifton, TX to perform the transponder testing of the launched satellites to affirm the post-launch health to verify the performance characteristics of the individual Globalstar satellites.

In addition, GUSA is requesting authority to operate at a power higher than that specified in 47 C.F.R § 2.106, footnote 5.364 to support the transponder testing of the launched satellites. One of the primary tests to be performed for the health of the satellites is the determination and verification of spacecraft antenna patterns. Uplink, or spacecraft 1.6 GHz receive, antenna verification requires the use of an unmodulated carrier (CW) at an EIRP greater than that transmitted from a Globalstar handset transceiver. This increased EIRP is required in order to create sufficient dynamic range to provide the ability to measure peak-to-null antenna pattern variations of 30 dB. The performance of these In-Orbit-Tests will be crucial to the successful deployment of the replacement Globalstar spacecrafts that are planned for the near future. The attached link budget in the Table 1 indicates the C/N expected with an EIRP of 19 dBW. As shown in the link budget, even with the level of 19 dBW, worst case C/N falls below the required dynamic range for the pattern measurements. This transmit level will be operated for short periods only during testing of the satellites at a fixed ground location at Clifton, TX.

Downlink, or spacecraft 2.4 GHz transmit, antenna verification requires the use of a high gain antenna which is accommodated by the receive function of the subject antenna.

The International Bureau has previously granted such requests. *See, e.g.*, Application of TerreStar License, Inc., File No. SES-STA-20091102-01408 (granted Jan. 7, 2010).

STA term: October 18, 2010, to April 16, 2011
Site Location: Clifton, Texas
Latitude: 31 ° 48 ' 2.1 " N
Longitude: 97 ° 36 ' 46.0 " W

Transmit frequency: 1610 – 1618.725 MHz

Receive frequency: 2483.5-2500 MHz

Polarization: LHCP

Antenna Size: 1.2 m
 Gain: Tx: 23.4 dBi at 1.620 GHz
 Rx: 26.7 dBi at 2.490 GHz

Maximum antenna height: 5 meters above ground level

Necessary Bandwidth: Transmit bandwidth is 8.725 MHz
 Receive bandwidth is 16.5 MHz
 Maximum carrier bandwidth is 50 kHz

Carrier: See table below

<u>Frequency Band (MHz)</u>	<u>T/R Mode & Polarization</u>	<u>Emission Designator</u>	<u>Maximum EIRP (dBW)</u>	<u>Maximum EIRP Density (dBW/4kHz)</u>	<u>Modulation</u>
1610-1618.725	Tx – LHCP	N0N	19	19	Unmodulated CW for testing
2483.5-2500	Rx – RHCP	N0N			Unmodulated CW for testing

Satellite: HIBLEO-X GLOBALSTAR 2.0 (Pending France-licensed Globalstar Big-LEO MSS system)
 Orbital Location: NGSO (1414 km altitude, 52 degree inclination)
 Elevation Angle (E/W): 5 degrees to 90 degrees
 Azimuth (E/W): 0 degrees to 360 degrees

Satellite: S2115 (U.S.-licensed Globalstar Big LEO MSS system)
 Orbital Location: NGSO (1414 km altitude, 52 degree inclination)
 Elevation Angle (E/W): 5 degrees to 90 degrees
 Azimuth (E/W): 0 degrees to 360 degrees

FAA notification is not required as the antenna structure does not exceed Part 17 notice criteria.

Table 1 Link Budget for the IOT Antenna

Return Link: 1.6 GHz up/7 GHz down		
	Outer	
<u>Uplink Analysis</u>		Units
Frequency	1.6	GHz
EIRP per user	19.0	dBW
Altitude	1414	km
User elevation angle	5	deg
Slant Range	3953	km
Path loss	-168.5	dB
Polarization & Tracking loss	-1	dB
S/C Rx Signal Strength	-150.5	dB
Satellite antenna gain	12.60	dBi
Line loss	-2.00	dB
User signal at transponder	-139.9	dBW
System noise temperature	396.64	K
Thermal noise density, No	-202.6	dBW/Hz
IOT measurement bandwidth	34.8	dB-Hz
Uplink C/(N)	27.9	dB
Nominal transponder gain	127.4	dB
<u>Downlink Analysis</u>		
Frequency	6.98	GHz
TX power per user	-8.4	dBW
Transmit line loss	-2.2	dB
Satellite antenna gain	4.00	dBi
EIRP per user	-6.5	dBW
GW elevation angle	5	deg
Range	3953	km
Free space loss (5 deg GW elev)	-181.3	dB
Polarization & tracking loss	-0.1	dB
Pointing loss	-1.0	dB
RX signal/user/satellite	-188.9	dBW
GW antenna gain (incl. line losses)	49.5	dBi
RX signal at antenna output/user/satellite	-139.4	dBW
System noise temperature	127.7	K
Thermal noise density, No	-207.5	dBW/Hz
Downlink C/(N)	33.4	dB
Overall (up&down) C/(N)	26.8	dB
Required Measurement Dynamic Range	30.0	dB
Worstcase Measurement C/N	-3.2	