Approved by OMB
3060–0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATIONEnter a description of this application to identify it on the main menu:
DISA (Ft. Belvoir) STA – 30 days (Sep 2014).

1. Applicant

Name:	O3b Limited	**Phone Number:**	202–813–4026
DBA Name:		**Fax Number:**	
Street:	900 17th Street, NW, #300	**E–Mail:**	joslyn.read@o3bnetworks.com
City:	Washington	**State:**	
Country:	USA	**Zipcode:**	–
Attention:	Ms Joslyn Read		

30 days "With conditions"

FEDERAL COMMUNICATIONS ... GRANTED International Bureau

File # SES-STA-20140903-00686

Call Sign N/A (or other identifier) Grant Date 03/30/2015

Term Dates From 04/01/2015 To: 04/30/2015

Approved:

Applicant: O3b Limited
Call Sign: No Call Sign
File No.: SES-STA-20140903-00686
Special Temporary Authority

O3b Limited is granted special temporary authority (STA), for 30 days, to conduct non-commercial testing and demonstration purposes of two new 1.2 meter Orbit Communications antennas model AL-7103-Ka at the U.S. Army Base at Fort Belvoir located in Springfield, Virginia (38 deg 45'16.2" NL/ 77deg 11'39.8"WL) to communicate with United Kingdom's authorized non-geosynchronous orbit (NGSO) satellites in the fixed satellite service (FSS) operates by O3b. Operations pursuant to the STA are subject to the terms of its application, the Commission's Rules, and the following conditions.

1. Operations are limited to the following frequency bands and emissions:

Frequency Band	Emissions	Maximum E.I.R.P.	Maximum E.I.R.P. Density
27.652-28.388 GHz	216MG7D	60.6 dBW	13.3 dBW/4kHz
27.652-28.388 GHz	54MG7D	60.6 dBW	19.3 dBW/4kHz
28.60-29.10GHz	54MG7D	60.6 dBW	19.3 dBW/4kHz
28.60-29.10GHz	216MG7D	60.6 dBW	12.3 dBW/4kHz
17.852-18.588GHz	216MG7D		
17.852-18.588GHz	54MG7D		
18.80-19.30 GHz	216MG7D		
18.80-19.30GHz	54MG7D		

2. Operations are on a secondary basis and O3b must not cause harmful interference to stations operating on a primary basis and must not claim protection from stations operating on a primary basis secondary.

3. Operations in the 17.8-18.3 GHz band does not conform to the U.S. Table of Frequency Allocations, 47 C.F.R §2.106, but is being granted only at this location for the limited purposes of demonstrating the O3b system's capabilities to potential government customers and that grant of this STA is without prejudice to any determination that the Commission may make regarding authorizations for government or commercial fixed satellite service in the 17.8-18.3 GHz band within the U.S.

4. The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety)

provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.

5. Grant of this authorization is without prejudice to any determination that the Commission may make regarding any pending or future application to communicate with O3b's NGSO FSS system.

6. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at O3b's risk.

7. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately.

30 days "with conditions"

File # SES-STA-20140903-00686

Call Sign N/A Grant Date 03/30/2015
(or other identifier)

Term Dates
From 04/01/2015 To: 04/30/2015

Approved:

2. Contact

Name:	Joseph A. Godles	**Phone Number:**	202-429-4900
Company:	Goldberg Godles Wiener & Wright LLP	**Fax Number:**	202-429-4912
Street:	1229 19th Street, NW	E-Mail:	jgodles@g2w2.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20036 -2413
Attention:		**Relationship:**	Legal Counsel

(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 or Submission ID

4a. Is a fee submitted with this application?
◉ If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).
○ Governmental Entity ○ Noncommercial educational licensee
○ Other(please explain):

4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station

5. Type Request

○ Use Prior to Grant ○ Change Station Location ◉ Other

6. Requested Use Prior Date 10/27/2014	

7. CitySpringfield	8. Latitude (dd mm ss.s h) 38 45 16.2 N
9. State VA	10. Longitude (dd mm ss.s h) 77 11 39.8 W

11. Please supply any need attachments.

Attachment 1: STA request Attachment 2: Attachment 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.)

O3b Limited hereby requests Special Temporary Authority to operate an earth station to be located at the U.S. Army Base in Fort Belvoir, VA that will communicate with the satellite system operated by O3b for the 30-day period between October 27, 2014 and November 26, 2014.

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.

(●) Yes ( ) No

14. Name of Person Signing Joslyn Read	15. Title of Person Signing Vice President, Regulatory Affairs

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).

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104–13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

O3b Limited ("O3b"), pursuant to Section 25.120 of the Commission's rules, hereby respectfully requests special temporary authority ("STA") to operate an earth station to be located at the U.S. Army Base in Fort Belvoir, Virginia ("Ft. Belvoir Earth Station") that will communicate with the satellite system operated by O3b.[1] In this filing, O3b seeks a 30-day STA for the period between October 27, 2014 and November 26, 2014.

The Ft. Belvoir Earth Station will be used for non-commercial testing and demonstration purposes. The Ft. Belvoir Earth Station will simulate potential applications of the O3b satellite system, including interactive video teleconferencing, interactive access to complex web content from the Internet and very large file transfers. As discussed below, grant of the requested authority is in the public interest as it will allow O3b to test and evaluate O3b services that could benefit the U.S. Department of Defense.

Test Details and Public Interest Showing

The Ft. Belvoir Earth Station will communicate with O3b's UK-authorized, Ka-band, Medium Earth Orbit, non-geostationary satellite orbit ("NGSO") Fixed-Satellite Service ("FSS") system[2] and O3b's gateway earth station in Vernon, TX.[3]

The frequencies to be used by the Ft. Belvoir Earth Station are:

- 27.6-28.4 GHz, 28.6-29.1 GHz (uplink)
- 17.8-18.6 GHz, 18.8-19.3 GHz (downlink)

The Ft. Belvoir Earth Station will consist of two (2) 1.2m Orbit antennas. O3b has previously been granted an STA to operate this earth station at the CODA Lab location in San Diego, California[4] and has requested STAs to operate the earth station at the Data Technology Solution ("DTS") facility in Breaux Bridge, Louisiana[5] and at Oil Comm 2014.[6]

The Ft. Belvoir Earth Station antennas will be mounted on a temporary fixed platform. Although the pointing angle of the antennas will change as O3b's in-orbit satellites are tracked, the platform will remain stationary during the demonstration.

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[1] Although the Ft. Belvoir Earth Station will be located at a U.S. government facility during the term of the STA, it will be operated and controlled by O3b.

[2] O3b's first four satellites were launched on June 25, 2013. O3b's next batch of four satellites was launched on July 10, 2014.

[3] *See* O3b Limited, Call Sign E130021, File No. SES-LIC-20130124-00089, granted June 20, 2013 ("O3b Texas License").

[4] *See* O3b Limited, File No. SES-STA-20131228-01209, filed December 23, 2013 ("O3b CODA STA Application"), and which was placed on Public Notice on April 2, 2014 and granted on April 29, 2014.

[5] *See* O3b Limited, File No. SES-STA-20140731-00627, filed July 31, 2014 ("O3b DTS STA Application").

[6] *See* O3b Limited, File No. SES-STA-20140819-00666, filed August 19, 2014 ("O3b Oil Comm STA Application").

Grant of this application will serve the public interest, convenience and necessity by allowing O3b to show how its system can effectively deliver high bandwidth network connectivity to Department of Defense facilities and employees. O3b will demonstrate the advantages of its system's high throughput and low latency for providing a variety of valuable communications services, including voice, data transfers and video conferencing using connected devices.

The O3b Satellite System

In its initial FCC application, which sought authority for a gateway earth station located in Hawaii, O3b stated that it planned to operate eight NGSO satellites that would be spaced equally, *i.e.,* at 45° intervals.[7] The Commission granted this application.[8]

O3b has filed an application seeking to modify its Hawaii license to give it the flexibility to operate up to two of its eight NGSO satellites as in-orbit spares.[9] The remaining satellites would be equally spaced in O3b's authorized orbital plane, and each in-orbit spare would be co-located with a non-spare satellite.[10] O3b has been granted an STA pending action on its modification application.[11]

Earth Station Technical Parameters

The following documents containing technical details of the operations proposed under the requested STA are attached:

- Annex 1: FCC Form 312, Schedule B. O3b proposes to operate the Ft. Belvoir Earth Station during this 30-day term in accordance with the parameters specified in the attached Schedule B.[12]
- Annex 2: Link Budgets. Representative links for the Ft. Belvoir Earth Station are provided.
- Annex 3: Characteristics of the 1.2m Orbit Antenna are provided for the Commission's convenience. O3b previously submitted this information to the Commission.[13]

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[7] *See* Application for Hawaii Earth Station, File No. SES-LIC-20100723-00952, Legal Narrative, Section III and Attachment A thereto (Technical Statement), Section A.2.

[8] *See* O3b Limited, Call Sign E100088, File No. SES-LIC-20130124-00089, granted Sept. 25, 2012 ("O3b Hawaii License").

[9] *See* O3b Limited, Call Sign E100088, File No. SES-STA-20140814-00656. *See also* O3b Limited, Call Sign E100088, File No. SES-MOD-20140814-00652.

[10] No changes were sought to the technical parameters identified in the licenses and STAs held by O3b and its customers. No changes were made to O3b's Schedule S, either, but O3b noted that the number of satellites and phase angles in Section S4 and S5 of Schedule S will vary to the extent that O3b operates one or more in-orbit spare satellites.

[11] *See* O3b Limited, Call Sign E100088, File No. SES-STA-20140814-00656.

[12] Although O3b is not seeking a regular license for the Ft. Belvoir Earth Station, O3b is providing a Schedule B containing technical parameters for the Commission's convenience.

[13] *See* O3b blanket maritime earth station application, File No. SES-LIC-20130528-00455, Technical Attachment at A.6. *See also* O3b DTS STA Application; O3b Oil Comm STA Application.

- Annex 4: Comsearch Reports. Comsearch Reports are provided for bands in which terrestrial frequencies have primary allocations. Comsearch notified operators within a coordination zone calculated using the ITU RR Appendix 7 guidelines.
    - 27.6-28.35 GHz band. As stated in the attached Frequency Coordination Report, Comsearch has notified all existing and proposed LMDS licensees that are within the coordination contours of the Ft. Belvoir Earth Station and that potentially could be affected by O3b's transmissions in the 27.6-28.35 GHz portion of the Ka- Band. No objections were received from any of these parties.
    - 18.3-18.6 GHz band. As stated in the attached Interference Analysis Report, for operations in the 18.3-18.6 GHz band, the Ft. Belvoir Lab Earth Station will operate satisfactorily within the 18 GHz microwave environment, and there will be no restrictions of its operation due to interference considerations.

Further, O3b incorporates by reference the following technical parameters previously provided by O3b:

- Schedule S. In its application for a gateway earth station in Hawaii, O3b submitted a Schedule S describing its satellite system's technical characteristics.[14] The Schedule S correctly described the O3b satellite system for that application, and numerically enveloped all of the necessary parameters for future earth station applications. In order to assist the Commission in processing present and future applications, O3b subsequently provided a modified Schedule S that incorporates additional information submitted to the Commission since the Hawaii application was filed.[15] O3b will operate its Ft. Belvoir Earth Station within the parameters described in O3b's modified Schedule S.
- U.S. Government Coordination. O3b has completed all necessary coordination with U.S. government satellite networks operating in Ka-band, including GSO and NGSO networks, as well as their associated specific earth stations filed under 9.7A and 9.7B of the ITU Radio Regulations through other administrations. O3b has also completed coordination, according to US footnote 334 of the FCC table of frequency allocations, with the U.S. government, and this US334 coordination agreement specifically provides for additional earth stations in U.S. territory operating with O3b's satellites, such as the Ft. Belvoir Earth Station. As a result, O3b's existing US334 coordination agreement covers the use of the Ft. Belvoir Earth Station as requested in this application.

[14] *See* O3b Limited, Call Sign E100088, File No. SES-LIC-20100723-00952, granted Sept. 25, 2012 ("O3b Hawaii License").

[15] *See* O3b Limited, Call Sign E130098, File No. SES-AMD-20131025-01138 ("O3b ESV Answers").

- Antenna Patterns. O3b previously submitted measured 30 GHz band antenna performance data for the 1.2m Orbit antenna to the Commission in the Coda Lab STA request[16] and the pending DTS and Oil Comm STA requests.[17]

Proposed Spectrum Use

O3b's proposed Ft. Belvoir Earth Station operations in shared bands are consistent with the Commission's rules and policies. O3b addresses each of these bands below.

UPLINK

27.6-28.35 GHz – Secondary uplink band shared with primary LMDS.

The 27.6-28.35 GHz uplink band is allocated to the local multipoint distribution service ("LMDS") on a primary basis. FSS operations are allocated on a secondary basis in the same band. Accordingly, O3b's proposed operations in this band must not cause harmful interference to primary LMDS stations.

The attached Comsearch coordination report demonstrates that O3b can operate its Ft. Belvoir Earth Station on a secondary basis in this band without causing harmful interference to LMDS licensees. Comsearch sent a coordination notice to all existing and proposed terrestrial licensees within the Comsearch coordination contours of the Ft. Belvoir Earth Station site. No objections were received from any of the incumbent licensees.

28.35-28.4 GHz – Secondary uplink band shared with primary GSO FSS stations.

In the 28.35-28.4 GHz band, there is a primary allocation for GSO FSS systems and a secondary allocation for NGSO FSS systems. O3b's Ft. Belvoir Earth Station transmissions in this band will be consistent with their secondary status vis-à-vis GSO FSS transmissions. The Commission has allowed similar secondary use of frequencies in the Ka-band uplink allocated to GSO FSS on a primary basis where applicants are prepared to accept interference from primary operations and can demonstrate that their proposed operations are not likely to cause harmful interference to primary operations.[18] O3b agrees to both of these standards.

As a secondary user of the 28.35-28.4 GHz band in the United States, O3b makes no claim of protection from interference from U.S.-licensed GSO FSS networks in this band segment. As for O3b's uplink operations in the 28.35-28.4 GHz band, the ITU has developed uplink equivalent power flux density limits ("$EPFD_{up}$") limits to protect co-frequency GSO FSS operations from unacceptable interference from NGSO FSS systems operating in the same frequencies. Specifically, in accordance with

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[16] *See* O3b Limited, File No. SES-STA-20131228-01209, filed December 23, 2013 ("O3b CODA STA Application"), and which was placed on Public Notice on April 2, 2014 and granted on April 29, 2014.
[17] *See* O3b DTS STA Application. *See also* O3b Oil Comm STA Application.
[18] *Northrop Grumman Space & Missions Systems Corporation*, 24 FCC Rcd 2330, at ¶¶ 72-73 (Int'l Bur. 2009); *contactMEO Communications*, LLC, 21 FCC Rcd 4035, at ¶¶ 23-24, (Int'l Bur., 2006).

Article 22 of the ITU Radio Regulations, if the applicable $EPFD_{up}$ limits are met, the NGSO FSS satellite system is considered to have met its obligations to protect GSO FSS networks from unacceptable interference. O3b demonstrated that its gateway located at Hawaii operating at the authorized power levels will meet the applicable ITU $EPFD_{up}$ limits in all frequency ranges where these limits apply, due to the inherent angular separation between the O3b and geostationary orbits when viewed from the Earth at latitudes away from the equator.[19]

The Ft. Belvoir Earth Station is located further north in latitude than the Hawaii gateway,[20] which results in an even greater angular separation between the O3b and geostationary orbits as viewed from the Earth and an even greater assurance that the applicable ITU $EPFD_{up}$ limits will be met by O3b's proposed operations. The proposed Ft. Belvoir Earth Station operations, therefore, also will meet the applicable ITU $EPFD_{up}$ limits. In any event, O3b confirms that its operations will be on a secondary basis relative to U.S.-licensed GSO FSS networks in the same band.

28.6-29.1 GHz – Primary uplink band for licensed NGSO FSS Systems.

Under the Commission's Ka-band frequency plan, the frequencies 28.6-29.1 GHz may be used on a primary basis by licensed NGSO FSS systems.[21] O3b recognizes, however, that operations under an STA for the Ft. Belvoir Earth Station demonstrations will be on a secondary, non-harmful interference basis. As shown below, the Ft. Belvoir Earth Station demonstrations will provide the requisite protection to allocated services operating in this band.

Avoidance of interference to GSO FSS systems. The proposed demonstrations will not cause any interference into, or require protection from, any co-frequency GSO satellites. As previously shown,[22] there is an inherent angular separation between the O3b and GSO arcs from the perspective of earth stations located away from the equator. The Ft. Belvoir Earth Station is located further north in latitude than the Hawaii gateway,[23] which results in an even greater angular separation between the O3b and geostationary orbits as viewed from the Earth. This means that the angular separation between the O3b and GSO arcs from the Ft. Belvoir Earth Station will be greater than the 7 degree separation accepted by the Commission when it approved O3b's Hawaii gateway. This ensures that GSO FSS systems will be adequately protected.

Avoidance of interference to or from Fixed Service (i.e., terrestrial) stations. Interference from the O3b Ft. Belvoir Earth Station transmissions into U.S. terrestrial Fixed Service ("FS") receivers in the

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[19] O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, Technical Attachment at A.10.1.
[20] The O3b Hawaii gateway latitude is 21° 40' 17.8" N; the Ft. Belvoir Earth Station latitude is 38° 45' 16" N.
[21] *See In the Matter of Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, 11 FCC Rcd. 19005, ¶¶59-62 and 79 (1996). *See also In the Matter of Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, 15 FCC Rcd 13430, ¶ 28 (2000).
[22] O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, Technical Attachment at A.10.1.
[23] *See* n. 20, *supra*.

28 GHz band is a non-issue because there is no allocation in the Commission's Ka-band Frequency Plan for FS stations operating in the 28.6-29.1 GHz band in the United States.[24]

DOWNLINK

17.8-18.3 GHz – Primary downlink band for licensed FS Systems.

This frequency band is allocated on a primary basis to FS, and there is no secondary allocation for NGSO FSS in the band. Accordingly, O3b requests a waiver of the Ka-Band Plan and Section 2.106 of the Commission's rules to permit O3b to operate its NGSO FSS system in the 17.8-18.3 GHz band for downlink operations on a non-conforming, non-interference basis. As noted above, in analyzing requests for non-conforming spectrum uses, the Commission has indicated it will generally grant such waivers where there is not potential for interference into any service authorized under the Table of Frequency Allocations and when the non-conforming operator accepts any interference from allocated services.

In this case, O3b's proposed non-conforming use of the 17.8-18.3 GHz frequency band for downlink operations will not cause harmful interference to FS operations in the same band. This is because O3b will meet the PFD limits at the earth's surface prescribed by the ITU for the protection of terrestrial services in this band. In addition, as a non-conforming user, O3b will accept interference from FS operations in the band.

In addition, an Interference Analysis Report from Comsearch and O3b's own analysis indicate that there will be no restrictions of O3b's operations due to interference considerations.

In light of the foregoing, a waiver of Section 2.106 of the Commission's rules and the Ka-Band Plan is warranted because no harmful interference will result to incumbent FS operations, O3b can operate satisfactorily within the 18 GHz microwave environment, and the public interest is otherwise served by permitting O3b to demonstrate its satellite services to the U.S. military.

18.3-18.6 GHz – Non-conforming downlink band shared with primary GSO FSS stations.

The 18.3-18.6 GHz band is allocated in the United States on a primary basis to GSO FSS. In the 18.3-18.6 GHz downlink band, the ITU has developed downlink equivalent power flux density ("$EPFD_{down}$") limits to protect GSO FSS networks from unacceptable interference from NGSO FSS systems operating in the same frequencies. Specifically, in accordance with Article 22 of the ITU Radio Regulations, if the applicable $EPFD_{down}$ limits are met, the NGSO FSS satellite system is considered to have met its obligations to protect GSO FSS networks from unacceptable interference. O3b confirms that its system will meet the applicable ITU $EPFD_{down}$ limits in all frequency ranges where these limits apply.[25]

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[24] *See In the Matter of Verizon Washington D.C., Application for Renewal of License for Common Carrier Fixed Point to Point Microwave Station KGC79*, 26 FCC Rcd 13511, 13516 (WTB 2011).

[25] *See* ITU Radio Regulations, Article 22. *See also* O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, Technical Attachment at A.10.1 for a discussion of O3b's compliance with the operational limits in Article

As an example of how these limits will be satisfied, O3b provided $EPFD_{down}$ calculations for transmissions to its Hawaii gateway earth station.[26] O3b also showed how the $EPFD_{down}$ limits can be satisfied at all latitudes.[27] Compliance with the $EPFD_{down}$ limits is even more easily achieved in the case of transmissions to O3b's Ft. Belvoir Earth Station than it is in the case of transmissions to O3b's Hawaii earth station. O3b is able to satisfy the limits by taking advantage of the inherent angular separation of the O3b and the GSO orbits when viewed from the surface of the Earth at latitudes away from the equator,[28] and O3b's Ft. Belvoir Earth Station will be located further from the equator than O3b's Hawaii earth station. The Ft. Belvoir Earth Station location, therefore, presents a strong case for non-interference to GSO FSS networks.

18.8-19.3 GHz – Primary downlink band for licensed NGSO FSS Systems.

Under the Commission's Ka-band frequency plan, the frequencies 18.8-19.3 GHz may be used on a primary basis by licensed NGSO FSS systems.[29] O3b recognizes, however, that operations under an STA for the Ft. Belvoir Earth Station demonstrations will be on a secondary, non-harmful interference basis. The Ft. Belvoir Earth Station demonstrations will provide the requisite protection to GSO FSS networks and terrestrial stations operating in this band.

Avoidance of interference to GSO FSS systems. This band is not allocated for GSO FSS networks.[30] Nevertheless, the proposed demonstrations will not cause any interference into, or require protection from, any co-frequency GSO satellites. As previously shown,[31] there is an inherent angular separation between the O3b and GSO arcs from the perspective of earth stations located away from the equator. As mentioned above, the Ft. Belvoir Earth Station is located further north in latitude than the Hawaii gateway, which results in an even greater angular separation between the O3b and geostationary orbits as viewed from the Earth. This means that the angular separation between the O3b and GSO arcs from the Ft. Belvoir Earth Station will be greater than the 7 degree separation accepted by the Commission when it approved O3b's Hawaii gateway. This ensures that GSO FSS systems will be adequately protected.

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22 of the ITU Radio Regulations. *See* also Letter from Brian D. Weimer, to Marlene H. Dortch, in re O3b Application for Hawaii Earth Station, File No. SES-LIC-20100723-00952 (Apr. 22, 2011), Annex A.

[26] O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, Technical Attachment at A.10.1.

[27] *See* id.

[28] *See* id.

[29] *See In the Matter of Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, 11 FCC Rcd. 19005, ¶¶59-62 and 79 (1996). *See also In the Matter of Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, 15 FCC Rcd 13430, ¶ 28 (2000).

[30] *See* id.

[31] O3b Hawaii License Application, FCC File No. SES-LIC-20100723-00952, Technical Attachment at A.10.1.

However, because the demonstrations O3b proposes in this STA request will be conducted on a secondary basis, O3b agrees to accept any interference that its Ft. Belvoir Earth Station may receive from 18.8-19.3 GHz band GSO FSS networks

Avoidance of interference to or from Fixed Service (i.e., terrestrial) stations. FS stations operating in the 18.8-19.3 GHz band are no longer co-primary with FSS users in this band.[32] However, because the demonstrations O3b proposes in this STA request will be conducted on a secondary basis, O3b agrees to accept any interference that its Ft. Belvoir Earth Station may receive from 18.8-19.3 GHz band FS stations. O3b will protect the 18.8-19.3 GHz band FS stations by complying with the space station PFD limits specified in Section 25.208 of the FCC rules.

Conclusion

The requested STA will allow O3b to evaluate and demonstrate the O3b system's operational capabilities and will not result in harmful interference to other authorized spectrum users. Accordingly, and for good cause shown, O3b respectfully requests that its STA be granted in time for it to commence testing under this 30-day STA on October 27, 2014.

[32] *See* 47 C.F.R. § 101.85(b)(2).