

** GRANT IN PART / DEFER IN PART **

S2935
O3b Limited
O3B

SAT-MOD-20160624-00060

IB2016001472



File # SAT-MOD-20160624-00060

Call Sign S2935 Grant Date 02/28/18
(or other identifier)

Term Dates
From 02/28/18 To:

Approved: *Stephen J. Duall*

Stephen J. Duall
Chief, Satellite Policy Branch

Approved by OMB
3060-0678

^{MOD}
Date & Time Filed: Jun 24 2016 4:28:39:236PM
File Number: SAT-~~LOI~~-20160624-00060
Callsign/Satellite ID: S2967

* IN PART, WITH
CONDITIONS

APPLICATION FOR SATELLITE SPACE STATION AUTHORIZATIONS FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only
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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

MOD of S2935 LOI

1-8. Legal Name of Applicant			
Name:	O3b Limited	Phone Number:	202-813-4026
DBA Name:		Fax Number:	
Street:	900 17th Street, NW, #300	E-Mail:	suzanne.malloy@o3bnetworks.com
City:	Washington	State:	
Country:	USA	Zipcode:	-
Attention:	Ms Suzanne Malloy		

ATTACHMENT TO GRANT
O3b Limited
IBFS File No. SAT-MOD-20160624-00060

IBFS File No(s):	SAT-MOD-20160624-00060 ¹	<p>GRANT IN PART/ DEFER IN PART With Conditions</p>  <p>International Bureau Satellite Division</p>
Licensee/Grantee:	O3b Limited	
Call Sign:	S2935	
Satellite Name:	O3b Limited Constellation	
Orbital Location: (required station-keeping tolerance)	Non-geostationary orbit (NGSO), medium-earth orbit (8,062 km equatorial circular orbit)	
Administration:	United Kingdom	
Nature of Service:	Fixed-Satellite Service (FSS)	
Scope of Grant:	<p>Modification of Grant of U.S. Market Access to add four space stations to current constellation of 12 space stations using the same orbital plane, altitude, and frequency plan as granted in IBFS File Nos. SAT-LOI-20141029-00118 and SAT-AMD-20150115-00004 (granted Jan. 22, 2015).</p> <p>Action is deferred on the remainder of the modification application, as amended in IBFS File Nos. SAT-AMD-20161115-00116, SAT-AMD-20170301-00026, and SAT-AMD-20171109-00154.²</p>	
Previous Grant(s):	IBFS File Nos. SAT-LOI-20141029-00118 and SAT-AMD-20150115-00004, granting U.S. market access for 12 satellites in medium-earth orbit (granted Jan. 22, 2015).	
Service Area(s):	Schedule S, S6 in IBFS File No. SAT-MOD-20160624-00060	
Frequencies:	<p>17.8-18.6 GHz (space-to-Earth) 18.8-19.3 GHz (space-to-Earth) 27.6-28.4 GHz (Earth-to-space) 28.6-29.1 GHz (Earth-to-space)</p> <p>Telemetry, Tracking, and Command operations within the 29.0873-29.0885 GHz and 19.2691-19.2701 GHz bands.</p>	
<p>Unless otherwise specified herein, operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with Federal Communication Commission's rules not waived herein. This grant is also subject to the following conditions:</p> <ol style="list-style-type: none"> 1. This grant of U.S. market access does not address the provision of any Direct-to-Home (DTH) service, Direct Broadcast Satellite Service (DBS)³ or Digital Audio Radio Service (DARS) to, from, or within the United States. 2. Operations in the 17.8-18.6 GHz, 18.8-19.3 GHz (space-to-Earth) and 27.6-28.4 GHz, 28.6-29.1 		

¹ This modification application was accepted for filing as part of the Commission's NGSO FSS Ka-band processing round. See *Policy Branch Information, Satellite Space Applications Accepted for Filing*, Report No. SAT-0118 (Sept. 9, 2016). In this modification, O3b seeks to add 8 satellites to its U.S. grant of market access. This application was originally filed as IBFS File No. SAT-LOI-20160624-00060. We have changed O3b's IBFS file number from a LOI (Letter of Intent) to MOD (modification) consistent with section 25.117 of the Commission's rules.

² Similarly, comments and petitions filed in response to O3b Limited's modification application, as amended, will be addressed in the deferred action.

³ With respect to DBS and DTH, this paragraph excludes from the scope of the grant those services specified in 47 CFR § 25.701(a)(1)-(5).

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GHz (Earth-to-space) bands are authorized up to the applicable power flux-density and equivalent power-flux density limits contained in section 25.208, 47 CFR § 25.208, and Articles 21 and 22, as well as Resolution 76 of the ITU Radio Regulations.

3. O3b Limited must cooperate with other NGSO FSS operators in order to ensure that all authorized operations, comport with the applicable limits for aggregate EPFD in the space-to-Earth direction (EPFD down) contained in Article 22 of the ITU Radio Regulations, as well as Resolution 76 of the ITU Radio Regulations.

4. Operations in the 27.6-28.35 GHz (Earth-to-space) frequency band are secondary with respect to Upper Microwave Flexible Use Service (UMFUS) operations, except for FSS operations associated with earth stations authorized pursuant to 47 CFR § 25.136, and will comply with any determinations set forth in the Spectrum Frontiers proceeding (GN Docket 14-177).

5. Operations in the 17.8-18.6 GHz, 18.8-19.3 GHz, 27.6-28.4, and 28.6-29.1 GHz bands must comply with spectrum sharing method specified in section 25.261, as revised by FCC 17-122, with respect to any other operations, licensed or granted U.S. market access pursuant to the processing rounds initiated in Public Notices DA 16-804 and DA 17-524.

6. Operations in the 17.8-18.6 GHz and 18.8-19.3 GHz frequency bands must complete coordination with U.S. Federal systems, in accordance with footnote US334 to the United States Table of Frequency Allocations, 47 CFR § 2.106, prior to being used. The use of space-to-Earth operations in the 17.8-18.6 GHz and 18.8-19.3 GHz bands must be in accordance with any signed coordination agreement reached between O3b Limited and U.S. Federal operators. Two weeks prior to the start of any operations in the 17.8-18.6 GHz or 18.8-19.3 GHz band, O3b Limited must provide contact information for a 24/7 point of contact for the resolution of any harmful interference to Jimmy Nguyen, Email: Jimmy.Nguyen@us.af.mil.

7. Prior to initiation of service, O3b Limited must receive a favorable or “qualified favorable” finding in accordance with Resolution 85 with respect to its compliance with applicable EPFD limits in Article 22 of the ITU Radio Regulations. O3b Limited must communicate the ITU finding to the Commission and submit the files containing the data used as input to the ITU validation software.

8. O3b Limited must maintain an electronic website bulletin board listing the ephemeris data for each satellite in the O3b Limited constellation, using the North American Aerospace Defense Command (NORAD) two-line element format. O3b Limited must update the orbital elements at least once every three days.⁴

9. O3b Limited must coordinate physical operations of spacecraft with any operator using similar orbits, for the purpose of eliminating collision risk and minimizing operational impacts. The orbital parameters specified in this grant are subject to change based on such coordination.

10. Prior to the initiation of service, O3b Limited must obtain from the United Kingdom Space Agency an authorization for deployment and space operations under the United Kingdom Outer Space Act. O3b must file evidence in IBFS File Nos. SAT-MOD-20160624-00060 demonstrating grant of any such authorizations within five business days of action by the United Kingdom Space Agency. Thereafter, this grant will remain effective only to the extent that launch and space operations continue to be authorized by the United Kingdom

⁴ In the *NGSO FSS Report and Order*, the Commission updated several rules and policies governing NGSO FSS systems, including simplifying the sharing of ephemeris data, now in section 25.146(e). See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report and Order and Further Notice of Proposed Rulemaking, FCC 17-122 (Sept. 27, 2017) (*NGSO FSS Report and Order*) at para. 58. The rules adopted in the Report and Order became effective January 17, 2018, except the amendments to sections 25.114, 25.115, 25.146, and 25.164, which contain information collection requirements that have not been approved by Office of Management and Budget (OMB). See 82 Fed. Reg. 59972-01 (Dec. 18, 2017). The Commission will publish a document in the Federal Register announcing such OMB approval and the effective date of these rule amendments.

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Space Agency under the United Kingdom Outer Space Act.

11. O3b Limited's satellite operations must be subject to direct and effective regulation by the United Kingdom concerning orbital debris mitigation.

12. O3b Limited's request for a waiver of the Ka-band Plan and the United States Table of Frequency Allocations, 47 CFR § 2.106, is dismissed as moot in view of the modifications to section 2.106 and Ka-band Plan adopted in the NGSO FSS Report and Order.⁵

13. O3b Limited's request for a waiver of section 25.210(i)(1) is moot as this rule is now limited to 17/24 GHz BSS operations.⁶

14. O3b Limited's request for a waiver of the band segmentation provision in section 25.157 is dismissed as moot. Modifications to the rule, adopted in the NGSO FSS Report and Order, exempt NGSO FSS systems subject to section 25.261 from the band segmentation rules in section 25.157.⁷

15. O3b Limited's request for a waiver of section 25.137(c) is DENIED. Given that the four space stations addressed in this grant are part of O3b's proposal to add 30 space stations to its current U.S. market access, we include the entire proposed constellation in the same processing round.⁸

16. O3b Limited's request for a waiver of section 25.145(c) of the Commission's rules, 47 CFR 25.145(c), is GRANTED. In the NGSO FSS Report and Order, the Commission eliminated section 25.145(c) and retained only the requirement of covering on a continuous basis the fifty states, Puerto Rico and the U.S. Virgin Islands (national coverage requirement). We grant this waiver because O3b Limited states that its system operates in an equatorial orbit as opposed to inclined orbit and as a result, due to look angle constraints, there is a limitation on the northernmost and southernmost latitudes that can be served by its system, and therefore it is not able to comply with the national geographic coverage requirement.⁹

17. This grant of U.S. market access and any earth station licenses granted in the future are subject to modification to bring them into conformance with any rules or policies adopted by the Commission in the future.

18. Communications between U.S. licensed earth stations and the O3b Limited space stations must comply with all existing and future coordination agreements reached between the United Kingdom and other Administrations, including all coordination agreements reached between the United Kingdom and the United States. In the absence of a coordination agreement, such communications must comply with applicable provisions of ITU Radio Regulations.

19. This grant is without prejudice to and is subject to the terms and conditions, including bond and milestone requirements, of any action the Commission may take in IBFS File Nos. SAT-MOD-20160624-00060, SAT-AMD-20161115-00116, SAT-AMD-20170301-00026, and SAT-AMD-20171109-00154.

Licensee/grantee is afforded thirty (30) days from the date of release of this action to decline the grant as conditioned. Failure to respond within this period will constitute formal acceptance of the grant as conditioned.

⁵ NGSO FSS Report and Order, Appendices A and B.

⁶ *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Second Report and Order, 30 FCC Rcd 14713, 14817 (2015).

⁷ NGSO FSS Report and Order, Appendix A.


⁸ *Public Notice*, Applications Accepted for Filing; Cut-off Established for Additional NGSO-like Satellite Applications or Petitions for Operations in the 12.75-13.25 GHz, 13.85-14.0 GHz, 18.6-18.8 GHz, 19.3-20.2 GHz, and 29.1-29.5 GHz Bands, DA 17-524 (IB rel. May 26, 2017).

⁹ *O3b Modification Application*, Narrative at 10-11.

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This action is taken pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 CFR § 0.261, and is effective upon release.

Station licenses are subject to the conditions specified in Section 309(h) of the Communications Act of 1934, as amended, 47 U.S.C. § 309(h).

Action Date:	February 28, 2018	
Term Dates	From: February 28, 2018	To:
Approved:	 Stephen J. Duall Chief, Satellite Policy Branch	

9-16. Name of Contact Representative

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

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.

a.

- (N/A) a1. Earth Station
 a2. Space Station

b.

- b1. Application for License of New Station
(N/A) b2. Application for Registration of New Domestic Receive-Only Station
(N/A) b3. Amendment to a Pending Application
(N/A) b4. Modification of License or Registration
(N/A) b5. Assignment of License or Registration
(N/A) b6. Transfer of Control of License or Registration
(N/A) b7. Notification of Minor Modification
(N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
- b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
 b10. Replacement Satellite Application - no new frequency bands
 b11. Replacement Satellite Application - new frequency bands (Not eligible for streamlined processing)
 b12. Petition for Declaratory Ruling to be Added to the Permitted List
(N/A) b13. Other (Please specify)

17c. 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): Petition for Declaratory Ruling – No Fee Required

17c. Fee Classification CLW – Space Station (Non-Geostationary)

18. If this filing is in reference to an existing station, enter:

(a) Call sign of station:

Not Applicable

19. If this filing is an amendment to a pending application enter:

(a) Date pending application was filed:

Not Applicable

(b) File number of pending application:

Not Applicable

TYPE OF SERVICE

<p>20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:</p> <p><input checked="" type="checkbox"/> a. Fixed Satellite</p> <p><input type="checkbox"/> b. Mobile Satellite</p> <p><input type="checkbox"/> c. Radiodetermination Satellite</p> <p><input type="checkbox"/> d. Earth Exploration Satellite</p> <p><input type="checkbox"/> e. Direct to Home Fixed Satellite</p> <p><input type="checkbox"/> f. Digital Audio Radio Service</p> <p><input type="checkbox"/> g. Other (please specify)</p>	
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p><input type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p>Not Applicable</p>
<p>23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:</p> <p><input type="radio"/> Connected to a Public Switched Network <input type="radio"/> Not connected to a Public Switched Network <input checked="" type="radio"/> N/A</p>	
<p>24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).</p> <p><input type="checkbox"/> a. C-Band (4/6 GHz) <input type="checkbox"/> b. Ku-Band (12/14 GHz)</p> <p><input checked="" type="checkbox"/> c. Other (Please specify upper and lower frequencies in MHz.)</p> <p>Frequency Lower: 17800 Frequency Upper: 29100.0000 (Please specify additional frequencies in an attachment)</p>	

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

(N/A) a. Fixed Earth Station
(N/A) b. Temporary-Fixed Earth Station
(N/A) c. 12/14 GHz VSAT Network
(N/A) d. Mobile Earth Station
 e. Geostationary Space Station.
 f. Non-Geostationary Space Station
 g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY: Not Applicable

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an "X" in the box(es) next to all that apply.) Not Applicable

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. §§ 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments. Yes No

ALIEN OWNERSHIP

Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30-34.

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.	

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules?
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.

Yes No

36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances.

Yes No

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances.

Yes No

38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances

Yes No

39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhibit, an explanation of the circumstances.

Yes No

40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.

Question 40

41. 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

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.

Yes No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station? United Kingdom

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

See attached Legal Narrative and Technical Annex.

Narrative & Tech Anx

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.

A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached.

C

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- Individual
- Unincorporated Association
- Partnership
- Corporation
- Governmental Entity
- Other (please specify)

45. Name of Person Signing
Suzanne Malloy

46. Title of Person Signing
Vice President, Regulatory Affairs

47. Please supply any need attachments.

1:

2:

3:

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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