

S2862 SAT-MOD-20150408-00019 IB2015000654
Terra Bella Technologies Inc.
SKYSATCONSTELLATION



*with conditions

File # SAT-MOD-20150408-00019

Call Sign S2862 Grant Date 08/31/16
(or other identifier)

Term Dates See conditions
From 08/31/16 To:

Approved: *Stephen J. Duall*
Stephen J. Duall
Chief, Satellite Policy Branch

Approved by OMB
3060-0678

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FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD – MAIN FORM

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FCC 312 MAIN FORM FOR OFFICIAL USE ONLY

APPLICANT INFORMATION

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

Skybox Application to Modify Call Sign S2862

1-8. Legal Name of Applicant

Name:	Skybox Imaging, Inc.	Phone Number:	720-238-5634
DBA Name:		Fax Number:	303-535-5592
Street:	2600 Pearl Street Suites A, B & C	E-Mail:	cscheffler@google.com
City:	Boulder	State:	CO
Country:	USA	Zipcode:	80302
Attention:	Craig Scheffler		

Terra Bella Technologies Inc.
IBFS File No. SAT-MOD-20150408-00019
Call Sign S2862

The application of Terra Bella Technologies Inc. (Terra Bella)(formerly Skybox Imaging, Inc.), IBFS File No. SAT-MOD-20150408-00019, for authority to construct, deploy and operate additional space stations as part of its Earth Exploration Satellite Service non-geostationary-orbit satellite system (Call Sign S2862) IS GRANTED. Specifically, Terra Bella is authorized to construct, deploy and operate 12 additional Earth Exploration Satellite Service space stations, SkySat-4 through SkySat-15, to transmit telemetry signals and remote-sensing data in the 8025-8400 MHz frequency band (space-to-Earth) from circular orbits with altitudes from 400 to 630 km, depending on the launch vehicle used, and with inclination ranging between 97 and 97.9 degrees, and to receive command signals in the 2025-2110 MHz band (Earth-to-space).¹ Operations under this grant of authority must be in accordance with the technical specifications set for in Terra Bella's application and Federal Communications Commission rules not waived herein, and are subject to the following conditions:

1. Terra Bella must prepare the necessary information, as may be required, for submission to the International Telecommunication Union (ITU) to initiate and complete the advance publication, coordination, due diligence, and notification process for these space stations, in accordance with the ITU Radio Regulations. Terra Bella will be held responsible for all cost-recovery fees associated with ITU filings. No protection from interference caused by radio stations authorized by other administrations is guaranteed unless coordination and notification procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other administrations. *See* 47 CFR § 25.111(b).
2. Power flux-density from operation of the SkySat-4 through SkySat-15 space stations in the 8025-8400 MHz band must not exceed the limits in No. 22.5 or Table 21-4 of the International Telecommunication Union's Radio Regulations or the limits in ITU-R Recommendation SA-1157.
3. Operations pursuant to this authorization must not cause harmful interference to stations operating in the 2025-2110 MHz band in accordance with the U.S. Table of Frequency Allocations. *See* 47 CFR § 2.106, Footnote US347.
4. Operations pursuant to this authorization must not cause harmful interference to stations operating in the 2025-2110 MHz band in accordance with the U.S. Table of Frequency Allocations. *See* 47 CFR § 2.106, Footnote US347.
5. Operation pursuant to this authorization must be in compliance with the terms of a Memorandum of Agreement between Terra Bella and the National Aeronautics and Space Administration pertaining to operation in the frequency band 8025-8400 MHz.
6. Transmissions of remote-sensing and telemetry data in the 8025-8400 MHz frequency

¹ Terra Bella has previously been authorized to construct, deploy, and operate SkySat-3 at an orbital altitude of approximately 510 by 502 km with inclination of 97.42 degrees to transmit telemetry signals and remote-sensing data in the 8025-8400 MHz frequency band (space-to-Earth) and to receive command signals in the 2025-2110 MHz band (Earth-to-space). *See* IBFS File No. SAT-MOD-20150408-00019 (granted in part and deferred in part June 10, 2016). Terra Bella has also previously been authorized to construct, deploy and operate two satellites in its NGSO system, SkySat-1 and SkySat-2. *See* IBFS File No. SAT-LOA-20120322-00058 (granted Sept. 20, 2012). Both satellites were authorized to transmit telemetry signals and remote-sensing data in the 8025-8400 MHz frequency band (space-to-Earth) from high-inclination circular orbits with altitudes from 450 to 637 kilometers and with inclination ranging between 85 and 100 degrees and were also authorized to receive command signals on center frequencies of 2081 MHz and 2083 MHz. All three satellites were successfully launched and are operational.

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band may only be made to and when within line of sight of the following earth stations:

Location
Fairbanks, AK
Tromso, Norway

Transmissions to other earth station locations in the 8025-8400 MHz frequency band require modification of this license condition to include such additional earth stations

7. Given the opportunity for additional entrants to operate in Terra Bella's requested frequency bands, we grant Terra Bella's request for a waiver of the modified processing round requirements in 47 CFR §§ 25.156 and 25.157. *See DigitalGlobe, Inc.*, Order and Authorization, 20 FCC Red 15696 (Sat. Div., Int'l Bur. 2005) at ¶ 8.

8. Because Terra Bella must comply with technical requirements in Part 2 of the Commission's rules, which should prevent harmful interference to other operators in the band, we grant its request for a waiver of the default service rules in 47 CFR § 25.217 (b). *See DigitalGlobe, Inc.*, supra, at ¶ 15.

9. This authorization will become null and void if, at any time during the license term, there are no Terra Bella satellites operating.

10. Terra Bella was subject to milestone and bond obligations imposed as conditions to a previous grant of authority to operate the SkySat-3 satellite in the 2020-2025 MHz band. *See supra*, note 1. We find that, following the discharge of the bond requirement associated with this previous grant, warehousing concerns are addressed in this situation through the imposition of condition 9 above.

11. Within 30 days after launching each satellite authorized herein, Terra Bella must file a notification with the Commission specifying the satellite's orbital altitude and inclination. The authority granted herein is subject to the existing license term for operation under S2862, which ends December 16, 2028.

12. Terra Bella's request for a waiver of Section 25.114(c) of the Commission's rules, 47 CFR §25.114(c), to the extent described in its application with respect to certain information to be provided in the Schedule S, IS GRANTED. We find that a waiver is warranted for the requirement for orbital information on the Schedule S for each satellite because the information Terra Bella provided in its Narrative is sufficient to fulfill the relevant informational requirements.

13. Terra Bella is afforded 30 days from the date of release of this authorization to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.

14. 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. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 CFR §§ 1.106 and 1.115, maybe filed within 30 days of the date of the public notice indicating that this action was taken.



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Term Dates see
From 08/31/16 To conditions

Approved:

Stephen J. Duall
Chief, Satellite Policy Branch

9-16. Name of Contact Representative

Name:	Ulises R. Pin	Phone Number:	202-373-6664
Company:	Morgan, Lewis & Bockius LLP	Fax Number:	202-373-6001
Street:	2020 K Street NW	E-Mail:	u.pin@morganlewis.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20006-1806
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.

- ☐ a1. Earth Station
- ☒ a2. Space Station

- (N/A) b1. Application for License of New Station
- (N/A) b2. Application for Registration of New Domestic Receive-Only Station
- ☐ b3. Amendment to a Pending Application
- ☒ b4. Modification of License or Registration
- b5. Assignment of License or Registration
- b6. Transfer of Control of License or Registration
- ☐ b7. Notification of Minor Modification
- (N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
- (N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
- (N/A) b10. Other (Please specify)
- (N/A) b11. Application for Earth Station to Access a Non-U.S. satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States
- (N/A) b12. Application for Database Entry
- ☐ b13. Amendment to a Pending Database Entry Application
- ☐ b14. Modification of Database Entry

<p>17c. Is a fee submitted with this application?</p> <p><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).</p> <p><input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee</p> <p><input type="radio"/> Other (please explain):</p>	
<p>17d.</p> <p>Fee Classification CGW – Space Station Modification (Non-Geostationary)</p>	
<p>18. If this filing is in reference to an existing station, enter:</p> <p>(a) Call sign of station: S2862</p>	<p>19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:</p> <p>(a) Date pending application was filed: (b) File number: SATLOA2012032200058</p>

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 type="checkbox"/> a. Fixed Satellite</p> <p><input type="checkbox"/> b. Mobile Satellite</p> <p><input type="checkbox"/> c. Radiodetermination Satellite</p> <p><input checked="" 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 checked="" type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p><input type="checkbox"/> Using U.S. licensed satellites</p> <p><input type="checkbox"/> Using Non-U.S. licensed satellites</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 checked="" type="radio"/> Connected to a Public Switched Network <input checked="" 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: 2025 Frequency Upper: 8400 (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.

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

26. TYPE OF EARTH STATION FACILITY:

- ☐ Transmit/Receive ☐ Transmit-Only ☐ Receive-Only ☒ N/A

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- ☐ a — authorization to add new emission designator and related service
- ☐ b — authorization to change emission designator and related service
- ☐ c — authorization to increase EIRP and EIRP density
- ☐ d — authorization to replace antenna
- ☐ e — authorization to add antenna
- ☐ f — authorization to relocate fixed station
- ☐ g — authorization to change frequency(ies)
- ☐ h — authorization to add frequency
- ☐ i — authorization to add Points of Communication (satellites & countries)
- ☐ j — authorization to change Points of Communication (satellites & countries)
- ☐ k — authorization for facilities for which environmental assessment and radiation hazard reporting is required
- ☐ l — authorization to change orbit location
- ☐ m — authorization to perform fleet management
- ☐ n — authorization to extend milestones
- ☒ o — Other (Please specify)

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?

☐ Yes ☒ No

30. Is the applicant an alien or the representative of an alien?

☐ Yes ☒ No ☐ N/A

31. Is the applicant a corporation organized under the laws of any foreign government?

☐ Yes ☒ No ☐ 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?

☐ Yes ☒ No ☐ 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?

☐ Yes ☒ No ☐ 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

<p>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.</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>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</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>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.</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>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. Exhibit 40</p>	

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?

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.)

Skybox requests modification of its authorization to operate a non-geostationary orbit Earth Exploration Satellite Service system, Call Sign S2862. See Exhibit 43 for additional information.

Exhibit 43

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
Joe Rothenberg

—>

46. Title of Person Signing
Engineering Director

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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