

## DESCRIPTION OF MODIFICATION APPLICATION

Stratos Offshore Services Company (“Stratos”)<sup>1</sup> requests authority to modify its license call sign E070114 (“License”), which authorizes operation of Stratos’s earth station on board vessels (“ESV”) network using Ku-band frequencies. This application seeks to add six new remote ESV terminal types. In addition, Stratos provides a map updating the record regarding the geographic area of operations for the ESVs in Stratos’s network. Stratos also modifies the range of the satellite arc in the frequency coordination information and the call sign of the hub antenna at the control point. In addition, Stratos clarifies that the remote ESV terminals in the network may operate with different hub antennas depending on the location of the vessel, but will maintain the same control point location and contact information identified on the license.

Stratos provides critical broadband satellite communications services to a wide array of users on marine vessels and oil drilling platforms that may be unable to obtain communications services through alternative facilities. In addition, the new remote terminal types will allow Stratos to meet the service requirements of its customers, including the U.S. Coast Guard and commercial users. Therefore, expeditious grant of this application is in the public interest.

### Currently Authorized Terminals

Stratos is currently authorized to operate the following remote terminal types in the Ku band under the License:

- Sea Tel Model 4003 1.0 m ESV
- Sea Tel Model 4006 1.0 m ESV
- Sea Tel Model 4996 1.2 m ESV
- Sea Tel Model 9797-32 2.4 m ESV
- Sea Tel Model 6006 1.5 m ESV

The area of operation of these terminals includes the Pacific Ocean region and international waters, in addition to the inland waterways, the Atlantic Ocean and the Gulf of Mexico regions identified in the original license application. *See* File No. SES-LIC-20070618-00826. Exhibit 9 attached shows the entire area of operation for these terminals.

Stratos seeks to modify this license to increase the range of the satellite arc included in the frequency coordination information to allow communication with additional ALSAT satellites. Stratos also seeks to update the call sign of the hub associated with the remote control point for the existing antennas. Stratos operates its ESV network through its hub station licensed under call sign E980235. The ESV terminals may also communicate with other hub

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<sup>1</sup> Ownership information for Stratos is provided in the attached Exhibit 1.

antennas, including the antenna licensed to SES Americom, Inc. under call sign E020071, currently identified as a hub station for the existing antennas, as well as other hub antennas licensed to other providers. In addition, when operating in international waters, the terminals may operate with other hubs located outside of the United States.<sup>2</sup> However, all ESV terminals are controlled at all times by Stratos through its control point in Lafayette, Louisiana, as identified on the license.

The Schedule B entries for the existing antennas (remote site IDs 1 through 5) provide only the modified parameters. All other parameters for these antennas, including the antenna gain, EIRP and emissions, remain the same.

### **New Antenna Types**

Stratos seeks to modify this license to add six new ESV terminal types to be operated in the 11.7-12.2 GHz and 14.0-14.5 GHz bands. Exhibit 2 contains radiation hazard studies for the proposed antennas. Each of the proposed antennas complies with the requirements of Section 25.222 of the Commission's rules, and the following information is being provided to demonstrate compliance. Stratos seeks ALSAT authority for each of the terminal types.

#### Compliance with Off-Axis EIRP Spectral Density Limits

Each of the six antenna types complies with the off-axis EIRP spectral density limits set forth in Section 25.222(a)(1) of the Commission rules. The antennas will be operated at a reduced maximum input power level, as necessary, in order to comply with these limits. In accordance with Section 25.222(b)(1), Stratos provides in the attached exhibits tables demonstrating that the off-axis EIRP spectral density limit is satisfied for the proposed terminals when calculated at the indicated maximum input power level.

The following is a list of the proposed new antennas and the maximum flange power density levels necessary to enable compliance with the EIRP spectral density limits. Four of the six antenna types have previously been reviewed and approved by the Commission in other ESV license applications. For ease of reference, Stratos provides the call sign and file number of the previously authorized operations.

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<sup>2</sup> See 47 C.F.R. § 25.222(a)(7) (allowing ESVs on U.S.-registered vessels to operate under control of a hub earth station location outside the United States provided that the ESV operator maintains a point of contact within the United States that will have the capability and authority to cause an ESV on a U.S.-registered vessel to cease transmitting if necessary).

Antenna Model/Name	Maximum Flange Power Density	Exhibit Demonstrating Compliance	Reference to Previous Application
Intellian V60G ESV	-22.3 dBW/4 kHz	<u>Exhibit 3</u>	Astrium Services Government, Inc. Call Sign WB36 File No. SES-MOD-20120109-00024 (granted Feb. 29, 2012)
Intellian V80G ESV	-20.13 dBW/4 kHz	<u>Exhibit 4</u>	Astrium Services Government, Inc. Call Sign WB36 File No. SES-MOD-20120109-00024 (granted Feb. 29, 2012)
Intellian V110 ESV	-16.2 dBW/4 kHz	<u>Exhibit 5</u>	Astrium Services Government, Inc. Call Sign E890649 File No. SES-MOD-20110629-00765 (granted Mar. 12, 2012)
SeaTel 4010 ESV	-16.3 dBW/4 kHz	<u>Exhibit 6</u>	Astrium Services Government, Inc. E890649 File No. SES-MOD-20110629-00765 (granted Mar. 12, 2012)
Intellian V100 ESV	-16.66 dBW/4 kHz	<u>Exhibit 7</u>	
Intellian V240G ESV	-14.0 dBW/4 kHz	<u>Exhibit 8</u>	

#### U.S. Point of Contact

Pursuant to Section 25.222(a)(4), Stratos has provided points of contact in the U.S., available 24 hours a day, seven days a week, with authority and ability to cease all emissions from the proposed Ku-band ESV antennas directly through the Stratos's network control facility, pursuant to Section 25.222(a)(7). As indicated in the Schedule B, remote site ID 12 consists of antennas that will be controlled through a control point in Herndon, Virginia due to customer requirements. This network control center site is operated as an additional control point associated with the teleport licensed to Stratos under call sign E980235. Therefore, the control point for the remote site ID 12 antennas will be Herndon. The control point for the other remote site IDs listed on Schedule B is Lafayette, Louisiana.

Each of the new terminals may operate with various hub antennas, including those licensed to Stratos and others, as indicated above for the existing antennas on the license. Like the existing antennas, the new terminals may operate with other hubs located outside of the United States when operating in international waters.<sup>3</sup> However, the ESV terminals will be controlled at all times by Stratos through the control points identified on Schedule B and described above.

#### Data Logging

Pursuant to the requirements in Section 25.222(a)(5), Stratos's ESV network is capable of recording for each ESV a record of the ship's location (*i.e.*, latitude/longitude),

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<sup>3</sup> See *id.*

transmit frequency, channel bandwidth and target satellite. This data will be recorded at time intervals no greater than every 20 minutes while the ESV is transmitting and will be maintained for one year.

#### Antenna Pointing Accuracy

As required by Section 25.222(b)(1)(iii) of the Commission's rules, Stratos provides in the exhibit indicated above for each of the six antennas, declarations from antenna manufacturers, Sea Tel and Intellian, as the case may be, stating that the proposed ESV antennas will maintain a stabilization pointing accuracy of better than 0.2 degrees under specified ship motion conditions. The antenna controller can detect and automatically cease transmission within 100 milliseconds if the pointing error should ever exceed 0.5 degrees.

#### Geographic Areas of Operation

The proposed antennas will operate in the Atlantic Ocean region, Gulf of Mexico Region and Pacific Ocean Region, as well as in inland waterways as shown in Exhibit 9. The proposed ESVs will not be operated in the 14.0-14.2 GHz frequency band within 125 km of the NASA TDRSS facilities on Guam or White Sands, New Mexico, as set forth in Section 25.222(c). Any planned ESV operations in this frequency band within these geographic limits will be coordinated through the NTIA/IRAC coordination process. In addition, the proposed ESVs will not be operated in the 14.47-14.5 GHz frequency band within the geographic limits set forth in Section 25.222(d) of the Commission's rules regarding the radio observatories in St. Croix, Virgin Islands, Mauna Kea, Hawaii, and Puerto Rico. Any planned ESV operations in this frequency band within the geographic limits set forth in Section 25.222(d) will be coordinated through the NTIA/IRAC coordination process.

#### FAA Notification Not Required

The ESV antennas proposed in this application satisfy the exemption set forth in the Commission's rules for antenna structures requiring FAA notification. *See* 47 C.F.R. § 17.14(b). Stratos does not expect ESV terminals mounted on vessels or other structures to meet the requirements for FAA notification pursuant to the Commission's rules. *See* 47 C.F.R. §§ 17.7, 17.14. In typical cases, either the height requirements will not be exceeded or the ESV will be mounted in such a manner that it will be shielded by permanent or existing structures. To the extent that an ESV will be mounted in such a manner that requires FAA notification, Stratos will provide such notification at that time.