Prepared for the Federal Communications Commission

Application for Modified License Authority for
Earth Stations on Board Vessels
Shared Data Networks, LLC
Call Sign E881406

June 21, 2011

INTRODUCTION

Shared Data Networks, LLC ("SDN"), pursuant to 47 C.F.R. § 25.117 of the Rules and Regulations ("Regulations") of the Federal Communications Commission ("Commission"), respectfully requests the modification of existing File No. SES-MOD-20060606-00936, Call sign E881406, to add 190 (one hundred and ninety) Ku-band Earth Stations on Vessels ("ESVs") throughout US channels and waterways, the Gulf of Mexico, the Caribbean Sea, the Atlantic Ocean, and the Pacific Ocean. The proposed ESVs seek to operate in the 11.7-12.2 GHz and 14.0-14.5 GHz ("Ku-Band") frequency bands to communicate with an already licensed hub station located in the United States.

The proposed antenna models will be SeaTel 4003, SeaTel 4006, SeaTel 4009 and Azimuth Unlimited (KNS), Model AZU-12, Model Z10Mk2 antennas. These antennas are capable of providing stabilized tracking. SeaTel and Azimuth Unlimited (KNS) have performed tests and generated the EIRP spectral density tables and plots here presented. Furthermore, Azimuth Unlimited (KNS) has declared that if the input power density to the feed of the Antennas is limited to -15.4dBW/4KHz for the AZU-12 and -18.4 dBW/4KHz for the Z10Mk2, these antennas will meet the requirements of Section 25.222 of the Regulations and SeaTel has declared that the 4003, 4006 and 4009 will meet the requirements of Section 25.222 when the input power density to the feed of the Antennas is limited to -16.3 dBW/4KHz. This report together with its attachments and exhibits addresses the requirements of Section 25.222 of the Regulations as well as the underlying ESV Order and Order on Reconsideration.

25.222 (A)(1)(II)(A) ANTENNA POINTING ERROR

"Each ESV transmitter shall maintain a pointing error of less than or equal to 0.2 degrees between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna." 47 C.F.R 525.222(a)(1)(i¡)(A).

According to Seatel, the Seatel 4003, 4006 and 4009 antennas will maintain a stabilization pointing accuracy of better than 0.2 degrees under specified ship motion conditions. Additionally, AZU(KNS) maintains that AZU-12 and Z10Mk2 antennas will also maintain a stabilization pointing accuracy of better than 0.2 degrees under specified ship motion conditions See Appendix A - Declaration of Cobham/Seatel and AZU (Azimuth Unlimited) (KNS).

25.222 (A)(1)(III)(A) AUTOMATIC SHUT-OFF

".,, all emissions from the ESV shall automatically cease within 100 milliseconds if the line angle between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degrees, and transmission will not resume until such angle is less than 0.2'.' 47 C.F.R 525.222(a)(1)(¡¡i)(A)

According to Seatel, the (Seatel 4003, 4006 and 4009) and AZU (AZU-12), (Z10Mk2) their antennas will automatically cease transmissions within 100 milliseconds if the pointing error should exceed 0.5 degrees and will not resume transmissions until the error drops below 0.2 degrees. See Appendix A - Declaration of Cobham/Seatel and Azimuth Unlimited (AZU) (KNS).

25.222 (A)(3) U.S. Contact INFORMATION

"There shall be a point of contact in the United States, with phone number and address included with the application available 24 hours a day, seven days of week, with authority and ability to

cease all emissions from the ESVs, either directly or through the facilities of a U. S. Hub or a Hub located in another country with which the U. S. has a bilateral agreement that enables such cessation of emissions. " 47 C.F.R $25.222(a)(3).

Shared Data Networks, LLC
Network Operations Center
55 Marietta Street
Atlanta, G.A. 30303
Toll Free: (800) 622-2140, Option 1
Telephone: (704) 587-4830
E-mail: noc@sdnglobal.com

Shared Data Network personnel, either via a network port or an out-of-band management system, have the authority and capability to remotely access equipment on the ESV to terminate emissions in case of suspected interference.

25.222 (a)(4) VESSEL TRACKING

"For each ESV transmitter a record of the ship location (i.e. latitude/longitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and maintained for a period of not less than 1 year, Records will be recorded at time intervals no greater than every 20 minutes while the ESV is transmitting. The ESV operator will make this data available upon request to a coordinator, fixed system operator, fixed-satellite system operator, NTIA, or the FCC within 24 hours of the request." 47 C.F.R. 25.222 (a)(4).

SDN has designed a system to record the vessel's location, transmit frequency, channel bandwidth and satellite. The system records this information every 20 minutes. This data will be stored locally and will be uploaded to SDN's Network on a regular basis and the data can be made available within 24 hours of a request by coordinator, fixed system operator, NTIA or the commission.

25.222 (a)(5) VESSELS 0F FOREIGN REGISTRY

"ESV operators communicating with vessels of foreign registry must maintain detailed information on each vessel's country of registry and a point of contact for the relevant administration responsible for licensing ESVs.' 47 C.F.R. 25.222 (a)(5).

In the event SDN must operate foreign-registered ESVs, it will maintain detailed information on each vessel as well as a point of contact for the relevant administration responsible for licensing the ESV.

25.222(a)(6) U.S. CONTROL 0F ESV HUB EARTH STAT|ON

"ESV operators shall control/ ESVs by a Hub earth station located in the United States, except that an ESV on U.S.-registered vessels may operate under control of a Hub earth station location outside the United States provided 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.' 47 C.F.R. $25.222 (a)(6).

The Antennas operated by SDN will be controlled by the earth station listed below:

E881406, 55 Marietta Street NW.,Atlanta, Ga.

§25.222 (a)(7) 10.95-11.2 GHz

"In the 10.95-11.2 GHz (Earth-toSpace) frequency bands ESVs shall not claim protection from interference from any authorized terrestrial stations to which frequencies are either already assigned, or may be assigned in the future."

SDN will not claim protection from interference in the 10.95-11.2GHz range from any authorized terrestrial stations to which frequencies are already assigned or may be assigned in the future.

25.222 (b)(1)(i) EIRP DENSITY TABLES

"Any ESV applicant filing an application pursuant to paragraph (a)(1) of this section must file three tables showing the off-axis EIRP level of the proposed earth station antenna in the direction of the place of the GSO; the co-polarized EIRP in the elevation plane, that is, in the place perpendicular to the plane of the GSO; and cross-polarized EIRP. In each table, the EIRP level must be provided at increments of 0.1degrees for angles between 0 degrees and 10 degrees off-axis, and at increments of 5 degrees for angles between 10 degrees and 180 degrees off-axis..25.222(b)(1)(¡).

SDN has provided spectral density tables and charts as exhibits to Form 312 of the underlying application. Such tables and charts were generated by Azimuth Unlimited (KNS) for the AZU-12 (1.2 meter) antenna, Z10Mk2 (1.0 meter) and Seatel (Cobham) for the Seatel 4009 (1.0 meter) antenna. The Seatel 4003 and 4006 antennas were referenced in Exhibit 1 of this application as previously licensed ESV antennas and covered under current licensed ESV operations using identical models of antennas, therefore it is not necessary, per FCC Section 25.218, to reproduce the same material that is already on file with the commission.

25.222 (b)(1)(ii) SDN CERTIFICATION

A certification, in Schedule B, that the ESV antenna conforms to the gain pattern criteria of 25.209 (a) and (b), that, combined with the maximum input power density calculated from the EIRP density less the antenna gain, which is entered in Schedule B, demonstrates that the off-axis EIRP density envelope set forth in paragraphs (a)(1)(i)(a) through (a)(1)(i)(c) of this section will be met under the assumption that the antenna is pointed to the target satellite."

25. 222(b) (1) (ii).
See Appendix B - Certification of SDN

25.222 (b)(1)(iii) MANUFACTURER CERTIFICATION

"An ESV applicant proposing to implement a transmitter under paragraph a(1)(ii)(A) of this section, must provide a certification from the equipment manufacturer stating that the antenna tracking system will maintain a pointing error of less than or equal to 0.2 degrees between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna and the antenna tracking system is capable of ceasing emissions within l00 milliseconds in the angle between the orbital location of the satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degrees. 25.222(b)(1)(iii).

According to Seatel (Cobham) the Seatel 4003, 4006, 4009 and Azimuth Unlimited (KNS) AZU-12, Z10Mk2 antennas will automatically cease transmissions within 100 milliseconds if the pointing error should

exceed 0.5 degrees and will not resume transmissions until the error drops below 0.2 degrees, See Appendix A - Declaration of Seatel (Cobham), and Azimuth Unlimited (KNS) paragraph 5.

25.222(b)(3) ESV GEOGRAPHIC AREA 0F OPERATION

"There shall be an exhibit included with the application describing the geographic area(s) in which the ESVs will operate 25.222(b) (3).

The geographic area where the ESVs will operate is in US channels and waterways, the Gulf of Mexico, Caribbean Sea, Atlantic Ocean, and Pacific Ocean.

25.222 (bX4) POINT 0F CONTACT

"The point of contact referred to in paragraph (a)(3) of this section and, if applicable paragraph (a)(6) of this section must be included in the application. 25.222(b)(4).

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Network Operations Center
55 Marietta Street
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Toll Free: (800) 622-2140, Option 1
Telephone: (704) 587-4830
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25.222 (b)(5) RADIATION EXPOSURE LIMITS

'ESVs that exceed the radiation guidelines of 1.1310 of this chapter, Radio frequency radiation exposure limits must provide with their environmental assessment a plan for mitigation of radiation exposure to the extent required to meet those guidelines." 25.222(b)(5).

See Exhibit to Form 312 of the underlying application.

25.222 (c) FREQUENCY COORDINATION

"Operations of ESVs in the 14.0-14.2 GHz (Earth-to-space) frequency band within 125 Km of the NASA TDRSS facilities in Guam or White Sands, New Mexico are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdependent Radio Advisory Committee (IRAC). Upon public notice from the Commission, all Ku-band ESV operators must cease operations.25.222(c).

The ESVs operated by SDN will not operate within 125 Km of the NASA TDRSS facilities in Guam or White Sands, New Mexico.

25.222 (d) FREQUENCY COORDINATION

"Operations of ESVs in the 14.47-14.5 GHz (Earth-to-space) frequency band within a) 45Km of the radio observatory on St. Croix, Virgin Islands...; b) 125 Km of the radio observatory on Mauna Kea,

Hawaii ...; and c) 90 Km of the Arecibo Observatory on Puerto Rico ... are subject to coordination through the National Telecommunications and Information Administration (NTIA) Interdependent Radio Advisory Committee (IRAC). 25.222 (d).

The ESVs operated by SDN will not operate within 48 Km of the radio observatory on St. Croix; within 125 Km of the radio observatory on Mauna Kea; or within 90 Km of the Arecibo observatory on Puerto Rico.

APPENDIX A, DECLARATION OF SEATEL **(COBHAM) and Azimuth Unlimited (AZU) (KNS)**

Cobham SATCOM
Marine Systems
Sea Tel Products
4030 Nelson Ave., Concord
California, 94520, USA
T: +1 (925) 798-7979
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Declaration of Cobham SATCOM, Sea Tel, Inc.

1. Cobham SATCOM - Marine Systems, Sea Tel Products designs, develops, manufactures and services marine stabilized antenna systems for satellite communication at sea. These products are in turn used by our customers as part of their Ku-band Earth Station on Vessels (ESV) networks.
2. FCC regulation 47 C.F.R. § 25.222 defines the provisions for blanket licensing of ESV antennas operating in the Ku Band. This declaration covers the requirements for meeting § 25.222 (a)(1) by the demonstrations outlined in paragraphs (b)(1)(i) and (b)(1)(iii). The requirements for meeting § 25.222 (a)(3)-(a)(7) are left to the applicant. The paragraph numbers in this declaration refer to the 2009 version of FCC 47 C.F.R. § 25.222.
3. Sea Tel hereby declares that the antennas listed below will meet the off-axis EIRP spectral density requirements of § 25.222 (a)(1)(i) with an N value of 1, when the following Input Power spectral density limitations are met:

0.6 Meter Ku Band, Models 2406 and USAT-24 are limited to	-21.6 dBW/4kHz
0.75 Meter Ku Band, Model USAT-30 is limited to	-21.6 dBW/4kHz
1.0 Meter Ku Band, Models 4003/4006/4009/4010 are limited to	-16.3 dBW/4kHz
1.2 Meter Ku Band, Models 4996/5009/5010 are limited to	-14.0 dBW/4kHz
1.5 Meter Ku Band, Models 6006/6009 are limited to	-14.0 dBW/4kHz
2.4 Meter Ku Band, Model 9797 is limited to	-14.0 dBW/4kHz

4. Sea Tel hereby declares that the antennas referenced in paragraph 3 above, will maintain a stabilization pointing accuracy of better than 0.2 degrees under specified ship motion conditions, thus meeting the requirements of § 25.222 (a)(1)(ii).
5. Sea Tel hereby declares that the antennas referenced in paragraph 3 above, will automatically cease transmission within 100 milliseconds if the pointing error should exceed 0.5 degrees and will not resume transmission until the error drops below 0.2 degrees, thus meeting the requirements of § 25.222 (a)(1)(iii).
6. Sea Tel maintains all relevant test data, which is available upon request, to verify these declarations.

Executed on: 7/28/10

By:

Peter G. Blaney
Chief Engineer, Sea Tel Products
Cobham SATCOM, Marine Systems

Document Number 130445 rev E

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Declaration of KNS Inc.

1. KNS Inc. designs, manufactures, and resells/distributes stabilized VSAT terminals, which are then used by our customers for their ESV networks.

2. This declaration is for 47 C.F.R §25.222 for blanket licensing of ESV antenna operating in Ku-band. It covers the requirement of §25.222(a)(1) and the rest of requirement in §25.222 are left to the applicant who operates ESV networks with our product.

3. KNS Inc. hereby declares the antenna listed below will meet §25.222(a)(1)(i) with the specified operating condition with demonstration of (b)(1)(iii).

Model	Operating condition
1.2 Meter Ku-band, Model SuperTrack Z12Mk2	N=1 Max. input power spectral density = -15.4 dBW/4KHz

4. KNS Inc. hereby declares a pointing error will be less than or equal to 0.2 degree between the orbital location of the target satellite and the axis of the main lobe of the antenna referenced in paragraph 3 above, thus meeting the requirements of §25.222(a)(1)(ii)

5. KNS Inc. hereby declares all emission from the antenna referenced in paragraph 3 above will automatically be ceased within 100 milliseconds if the pointing error exceeds 0.5 degrees for any reason and will not be resumed until the error is less than or equal to 0.2 degree, thus meeting the requirements of §25.222(a)(1)(iii)

Company: KNS Inc.
Title : Chief Executive Officer
Name: Byungwook Jin
Signature: _____
Date: 1 – April - 2011

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3. KNS Inc. hereby declares the antenna listed below will meet §25.222(a)(1)(i) with the specified operating condition with demonstration of (b)(1)(iii).

Model	Operating condition
1.0 Meter Ku-band, Model SuperTrack Z10Mk2	N=1 Max. input power spectral density = -18.4 dBW/4KHz

4. KNS Inc. hereby declares a pointing error will be less than or equal to 0.2 degree between the orbital location of the target satellite and the axis of the main lobe of the antenna referenced in paragraph 3 above, thus meeting the requirements of §25.222(a)(1)(ii)

5. KNS Inc. hereby declares all emission from the antenna referenced in paragraph 3 above will automatically be ceased within 100 milliseconds if the pointing error exceeds 0.5 degrees for any reason and will not be resumed until the error is less than or equal to 0.2 degree, thus meeting the requirements of §25.222(a)(1)(iii)

Company: KNS Inc.
Title : Chief Executive Officer
Name: Byungwook Jin
Signature:
Date: 1 – April - 2011

APPENDIX B - DECLARATION OF SDN

I, Adam Thompson, of Shared Data Networks, certify that the ESV antennas proposed in the underlying application conform to the gain pattern criteria of 25.209 (a)and (b), that, combined with the maximum input power density calculated from the EIRP density less the antenna gain, which is entered in Schedule B of Form 312, demonstrates that the off-axis EIRP density envelope set forth in paragraphs 25.222(a)(1)(i)(A) through (a)(1)(i)(C) of this section will be met under the assumption that the antenna is pointed to the target satellite. In addition, the engineering calculations described in this report are true and correct and are satisfactory in light of 25.222.

Signature  DATE 6-16-2011

APPENDIX C. USE OF NON-U.S. SATELLITES

SDN specifies pursuant to 25.137(a) of the Commission's Rules, that the only non-U,S. licensed satellites to be accessed by the earth station proposed in the instant application are those included on the FCC's Permitted List and eligible for ALSAT designation.

APPENDIX D - FAA NOTIFICATION

Pursuant to 17.14 (b) of the Regulations, Federal Aviation Administration (FAA) notification is not required because all the antenna structures in this application will be less than 6.1m in height.