

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
SES DTH DO BRASIL LTDA	)	File No. SAT-MPL-_____
	)	Call Sign S2974
Request for U.S. Market Access for SES-14	)	

**PETITION TO MODIFY U.S. MARKET ACCESS AUTHORITY**

SES DTH do Brasil Ltda (“SES DTH Brasil,” doing business as “SES”) hereby requests modification of its authority to use the Brazilian-licensed SES-14 spacecraft to serve the U.S. market from 47.5° W.L.<sup>1</sup> The purpose of this modification is to seek U.S. market access for the GOLD (“Global-Scale Observations of the Limb and Disk”) payload onboard SES-14; and seek authority to use SES-14 conventional Ku-band capacity for the provision of direct-to-home (“DTH”) services between the U.S. and additional markets in Europe and Africa. Grant of the requested authority is consistent with Commission precedent and will serve the public interest by allowing SES to provide expanded service from 47.5° W.L. and to respond to customer demand for DTH capacity.

A completed FCC Form 312 is attached, along with technical materials on Schedule S and in narrative form pursuant to Section 25.114 of the Commission’s rules. Launch of SES-14 is currently scheduled to occur in the first quarter of 2018, and SES seeks action on this modification consistent with that schedule.

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<sup>1</sup> See *SES DTH do Brasil Ltda*, File No. SAT-PPL-20160918-00093 (the “SES-14 Petition”), granted Feb. 9, 2017 (the “SES-14 Grant”).

## **I. BACKGROUND**

As noted in the original SES-14 Petition, New Skies Satellites B.V., an affiliate of SES DTH Brasil, currently operates the Netherlands-licensed NSS-806 spacecraft at 47.5° W.L. in accordance with International Telecommunication Union (“ITU”) filings of the Brazilian Administration and has been granted U.S. market access authority for that spacecraft.<sup>2</sup> SES DTH Brasil obtained additional operating rights at the nominal 48° W.L. from the Brazilian administration in 2014 and will operate the SES-14 satellite pursuant to those rights.

In addition to the communications payloads described in the SES-14 Petition, the SES-14 satellite will carry a hosted payload for the National Aeronautics and Space Administration (“NASA”) that is being constructed by the University of Colorado. The GOLD payload is designed to permit imaging of Earth’s upper atmosphere in order to provide increased understanding of space weather events that can affect operations of communications and global positioning satellites.<sup>3</sup> The GOLD payload consists of a two-channel ultraviolet scanning spectrometer, which will collect data regarding the Sun’s impact on the Earth’s thermosphere and ionosphere, and a Ku-band downlink beam in the frequency range 11670-11680 MHz, which will deliver the data collected by the spectrometer. The GOLD payload does not include an uplink beam.

SES is also seeking authority to serve additional DTH markets using the SES-14 Ku-band capacity. The broad coverage of the satellite’s spot beams provides opportunities for

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<sup>2</sup> *New Skies Satellites B.V.*, Call Sign S2591, File No. SAT-MPL-2013090-00114, granted in part on Dec. 6, 2013 and in part on Feb. 4, 2014.

<sup>3</sup> See “SES to Host NASA Payload on SES-14,” 13 April 2015, available at: <http://ses-gs.com/press-release/ses-host-nasa-payload/>.

SES to meet DTH service demand in markets in Europe and Africa, in addition to the markets covered by the SES-14 Grant.

## **II. AUTHORIZING THE SES-14 GOLD PAYLOAD TO SERVE THE U.S. IS CONSISTENT WITH FCC POLICIES AND THE PUBLIC INTEREST**

In the *DISCO II* proceeding,<sup>4</sup> the Commission adopted policies for determining whether to permit foreign-licensed satellites to serve the U.S. market, and these standards are codified in Section 25.137 of the Commission's Rules.<sup>5</sup> The Commission's policies are intended to ensure that entry by a foreign-licensed satellite will not distort competition in the U.S.<sup>6</sup> The *DISCO II* market access policies include a presumption that, with respect to services covered by the WTO agreement, entry into the U.S. market by entities licensed by WTO member countries will promote competition in the U.S. market.<sup>7</sup> Fixed-satellite service ("FSS") operations except for DTH are covered by the WTO agreement.<sup>8</sup>

The GOLD payload on SES-14 was commissioned by NASA in order to measure the Sun's impact on Earth's thermosphere and ionosphere. The data collected by the payload's spectrometer will be downlinked in a portion of the SES-14 extended Ku-band spectrum, 11670-11680 MHz, to a ground station located in Woodbine, Maryland for analysis by researchers studying the effects of space weather.

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<sup>4</sup> See *Amendment of the Commission's Policies to Allow Non-U.S. Licensed Space Stations providing Domestic and International Service in the United States*, Report & Order, 12 FCC Rcd 24094 (1997) ("*DISCO II*").

<sup>5</sup> 47 C.F.R. § 25.137.

<sup>6</sup> *DISCO II* at ¶ 7.

<sup>7</sup> *Id.* at ¶ 39.

<sup>8</sup> *Id.* at ¶¶ 25 & 30.

Authorizing the SES-14 GOLD payload to communicate with U.S. earth stations is consistent with the market access framework set forth in *DISCO II* and with Commission precedent. SES seeks authority to use the SES-14 GOLD payload to provide FSS. Because Brazil, which is the licensing administration for SES-14, is a WTO-member country, the SES proposal to provide WTO-covered services is subject to the presumption in favor of entry described above.

### **III. PERMITTING USE OF SES-14 TO SERVE ADDITIONAL DTH MARKETS IS CONSISTENT WITH *DISCO II***

In *DISCO II*, the Commission adopted the “ECO-Sat” test for services such as DTH that are excluded from the U.S. commitments in the WTO Telecom Agreement.<sup>9</sup> That test requires a determination whether U.S.-licensed satellites have “effective competitive opportunities” in the relevant foreign markets to provide analogous services.<sup>10</sup> Under the Commission’s rules, the relevant foreign markets for this test are (i) the country in which the non-U.S.-licensed satellite is licensed; and (ii) the countries in which communications with U.S. earth stations will originate or terminate.<sup>11</sup> To assess compliance with the ECO-Sat test, the Commission looks at whether there are *de jure* or *de facto* barriers to entry for U.S. satellite operators seeking to provide comparable services in the relevant foreign jurisdiction.<sup>12</sup>

The SES-14 Grant authorizes use of conventional Ku-band capacity on SES-14 to provide DTH services within the U.S. and between the U.S. and various countries in North, Central, and South America, and Europe. SES now seeks authority for DTH services between

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<sup>9</sup> *Id.* at ¶ 98.

<sup>10</sup> *Id.* at ¶ 99.

<sup>11</sup> *See* 47 C.F.R. § 25.137(a).

<sup>12</sup> *DISCO II* at ¶ 75.

the U.S. and the following additional countries in Europe and Africa: Iceland, Norway, Ukraine, Guinea, Liberia, Mauritania, Morocco, and Sierra Leone.

SES is not aware of any *de jure* or *de facto* barriers in Iceland, Norway, Ukraine, Guinea, Liberia, Mauritania, Morocco, or Sierra Leone to U.S. satellite operators wishing to provide capacity for DTH service. None of these countries requires that a satellite be granted landing rights prior to commencing service. Accordingly, there is nothing that would prevent a U.S.-licensed satellite from providing video services to customers in any of these jurisdictions.

Because U.S.-licensed operators have effective competitive opportunities to provide DTH transmission capacity in Iceland, Norway, Ukraine, Guinea, Liberia, Mauritania, Morocco, and Sierra Leone, the ECO-Sat test is satisfied for these additional route markets for DTH service by SES-14. Accordingly, SES respectfully requests that the Commission add Iceland, Norway, Ukraine, Guinea, Liberia, Mauritania, Morocco, and Sierra Leone to the route markets authorized for SES-14 to provide DTH services in the conventional Ku-band frequencies.

#### IV. CONCLUSION

For the foregoing reasons, SES respectfully requests that the Commission authorize U.S.-licensed earth stations to communicate with the SES-14 GOLD payload and permit use of SES-14 conventional Ku-band capacity for DTH service between the U.S. and Iceland, Norway, Ukraine, Guinea, Liberia, Mauritania, Morocco, and Sierra Leone.

Respectfully submitted,

SES DTH BRASIL SATELLITES B.V.

By: /s/ Petra A. Vorwig

Of Counsel

Karis A. Hastings  
SatCom Law LLC  
1317 F Street, N.W., Suite 400  
Washington, D.C. 20004  
Tel: (202) 599-0975

Petra A. Vorwig  
Senior Legal & Regulatory Counsel  
*for* SES DTH Brasil Satellites B.V.  
1129 20th Street N.W., Suite 1000  
Washington, D.C. 20036

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**TECHNICAL APPENDIX**  
**APPLICATION TO MODIFY U.S. MARKET ACCESS GRANT**  
**FOR SES-14 AT 47.5° W.L.**

## **1.0 Overall Description (§25.114(d)(1))**

This technical appendix is submitted in support of the modification application of SES DTH do Brasil Ltda. (“SES”) seeking U.S. market access for the GOLD (“Global-Scale Observations of the Limb and Disk”) payload of the SES-14 spacecraft to be located at 47.5° W.L. SES incorporates by reference the technical information it has already provided regarding SES-14 in File No. SAT-PPL-20160918-00093 (the “SES-14 Petition”), and provides here technical information describing the GOLD payload.

The GOLD payload includes a 2-channel ultraviolet scanning spectrometer, which will collect data regarding the Sun’s impact on the Earth’s thermosphere and ionosphere, and a Ku-band downlink beam in the frequency range 11670-11680 MHz, which is used to deliver the data collected by the spectrometer. The GOLD payload does not include an uplink beam.

## **2.0 Schedule S (§25.114(c))**

The online Schedule S being filed with this modification provides data regarding the GOLD payload to supplement the Schedule S information that was submitted with the SES-14 Petition.

As noted above, the GOLD payload does not include an uplink beam. Because the online Schedule S requires submission of receive beam information, SES has input information regarding the receive beam TCOL that duplicates the materials concerning that beam provided in the Schedule S filed with the SES-14 Petition.

The online Schedule S rounds the orbital slot to 48.0° W.L., but the authorized orbital position for SES-14 is 47.5° W.L.

## **3.0 PFD limits (§25.208)**

Table 1 demonstrates that the PFD values for SES-14’s Ku-band GOLD payload will comply with §25.208(b).

Table 1: Maximum PFD values and margins relative to permissible limits of §25.208(b) for GOLD payload

Elevation angle, deg	5.0	10.0	15.0	20.0	25.0	90.00
Max. EIRP, dBW	42.0	42.0	42.0	42.0	42.0	42.0
Output backoff, dB	0.0	0.0	0.0	0.0	0.0	0.0
Gain roll-off at elevation angle, dBi	-14.0	-10.0	-7.0	-4.0	-1.0	0.0
EIRP at elevation angle, dBW	28.0	32.0	35.0	38.0	41.0	42.0
Carrier bandwidth, MHz	8.4	8.4	8.4	8.4	8.4	8.4
EIRP density at elevation angle dBW/4kHz	-5.2	-1.2	1.8	4.8	7.8	8.8
Minimum spreading loss, dB/m <sup>2</sup>	-163.3	-163.2	-163.1	-162.9	-162.8	-162.7
25.208(b)(1) pfd limit, dBW/m <sup>2</sup> /4kHz	-150.0	-147.5	-145.0	-142.5	-140.0	-140.0
pfd, dBW/m <sup>2</sup> /4kHz	-168.5	-164.4	-161.3	-158.2	-155.1	-153.9
Margin, dB, relative to 25.208(b)(1)	18.5	16.9	16.3	15.7	15.1	13.9

#### 4.0 Satellite Antenna Gain Contours (§25.114(c)(4)(vi)(A))

The Schedule S and accompanying gxt file provide the typical antenna gain contours for the SES-14 GOLD beam at 47.5° W.L.

#### 5.0 Maximum Theoretical Operation Levels

The SES-14 GOLD payload will be operated consistently with coordination agreements with adjacent satellites. In any case, in the 11.45-11.7 GHz band, the downlink EIRP density of the SES-14 GOLD payload digital carriers will not exceed -18 dBW/Hz.

#### 6.0 Two Degree Spacing Certification (§25.114(d)(7) and 25.140(a))

SES certifies that SES-14 GOLD payload downlink EIRP density will not exceed 14 dBW/4kHz in the Ku-band unless higher levels are coordinated with the operators of authorized co-frequency space stations at assigned locations within six degrees of 47.5° W.L. There will be no uplink transmissions.

## DECLARATION

I, Philippe Secher, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing exhibit; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the exhibit and that it is complete and accurate to the best of my knowledge, information and belief.

/s/ Philippe Secher

Philippe Secher  
Senior Manager, Spectrum Management &  
Development  
SES Americom, Inc.

Dated: June 6, 2017