

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

In the Matter of )  
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SES AMERICOM, INC. )  
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Applications for Authority to Launch and Operate the )  
SES-18, SES-19, SES-20 and SES-21 C-Band Satellites )

**APPLICATIONS OF SES AMERICOM, INC.**

SES Americom, Inc. (“SES”) seeks authority under the Communications Act of 1934, as amended, and the Federal Communications Commission’s regulations thereunder, to launch, test, and operate four C-band spacecraft to provide service continuity and facilitate clearing part of the C-band spectrum as ordered by the Commission.<sup>1</sup> The four satellites include three replacement spacecraft and one in-orbit spare. Licensing of these spacecraft is consistent with the C-Band Order, which states that applications filed by C-band incumbent space station operators such as SES for replacement satellites and additional spacecraft that will promote more efficient use of the C-band are exempt from the freeze on new C-band satellite applications.<sup>2</sup>

The satellite names and locations are as follows:

- SES-18 will replace AMC-11 and the C-band capacity of AMC-1 at 131° W.L.
- SES-19 will serve as an in-orbit spare at the nominal 103° W.L. location.
- SES-20 will replace AMC-8 and the C-band capacity of AMC-4 at 135° W.L.
- SES-21 will replace the C-band capacity of SES-3 at the nominal 103° W.L.

location.

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<sup>1</sup> *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, Report and Order and Order of Proposed Modification, 35 FCC Rcd 2343 (2020) (“C-Band Order”).

<sup>2</sup> *Id.* at 2392-92, ¶ 115 & n.327. *See also* 47 C.F.R. § 2.106, NG182.

Each satellite will operate consistent with the terms of the C-Band Order and the Commission rules adopted therein, providing communications services within the contiguous United States (“CONUS”) only in the 4.0-4.2 GHz portion of the band.<sup>3</sup> Outside of CONUS, the satellites will operate in the full 3.7-4.2 GHz C-band spectrum.<sup>4</sup>

SES currently plans to perform in-orbit testing (“IOT”) at 142° W.L., but the IOT plans have not yet been finalized and will depend on the circumstances at the time of launch. Some satellites may be tested at their assigned orbital locations,<sup>5</sup> and others may be tested at an offset from 142° W.L. To maximize its operating flexibility and limit the need for further applications, SES requests authority to perform IOT of each satellite at any location between 141.2° W.L. and 142.8° W.L. with an east-west stationkeeping tolerance of +/- 0.1 degrees.<sup>6</sup> SES also seeks authority to perform telemetry, telecommand and control (“TT&C”) in order to position each satellite at its IOT location and thereafter drift each satellite to its assigned orbital position.

Construction of the satellites is well under way, and SES currently expects to launch all four spacecraft during the third quarter of 2022. SES seeks action on these applications consistent with that schedule.

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<sup>3</sup> See 47 C.F.R. § 2.106, NG182 & § 25.147.

<sup>4</sup> See 47 C.F.R. § 25.147(c). As noted in SES’s Transition Plan, the proposed new satellites “have been designed to ensure substantially the same or better service to current customers and Incumbent Earth Station operators. While these satellites will include incidental coverage of areas around the United States (similar to current SES satellites at 101° W.L., 103° W.L. and 105° W.L.), such as Mexico, SES does not intend to provide international-only services over these satellites.” See Letter of Brian D Weimer, Counsel to SES Americom, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 20-173, filed July 7, 2021, attaching SES Americom, Inc. Accelerated C-band Transition Implementation Plan (“SES Transition Plan”) at 8-9 (footnote omitted).

<sup>5</sup> Any testing at a satellite’s assigned orbital location will conform to the terms of the requested space station license and therefore will not require separate authority.

<sup>6</sup> SES will notify the Commission of the selected testing location for each satellite prior to launch.

Technical information relating to the proposed spacecraft is provided on Schedule S and in narrative form pursuant to Section 25.114 of the Commission's Rules,<sup>7</sup> along with a completed Form 312 for each satellite.

## **I. INTRODUCTION**

SES is legally and technically qualified to launch, test, and operate the C-band spacecraft as proposed herein. Grant of these applications will serve the public interest by ensuring continuity of service for U.S. customers and furthering the transition of the lower 300 MHz of the C-band spectrum for terrestrial mobile operations pursuant to the C-Band Order.

### **A. SES Background**

SES is a pioneer and leading provider of satellite capacity in the United States. SES has headquarters in Princeton, New Jersey, and together with its affiliates provides U.S. and international satellite capacity through a fleet of over 50 geosynchronous communications satellites. SES (then known as RCA American Communications, Inc.) launched its first domestic communications satellite in December 1975. Today, SES and its affiliates operate over two dozen satellites with coverage of the United States, providing satellite capacity for broadcast and cable video distribution, VSAT data networks, remote communications, and government agencies.

### **B. SES-18 Spacecraft**

SES-18 will be positioned at 131° W.L. and will replace the C-band AMC-11 satellite and the C-band capacity of the AMC-1 satellite. AMC-11 has operated at 131° W.L. since its

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<sup>7</sup> SES-18 and SES-19 are technically identical satellites being manufactured by Northrop Grumman, and SES-20 and SES-21 are technically identical satellites being manufactured by Boeing. SES has prepared a single technical appendix for each pair of identical spacecraft.

launch in 2004.<sup>8</sup> Prior to that, the Satcom C-3 spacecraft launched in 1992 operated at this location.<sup>9</sup> AMC-1 has operated at 130.9° W.L. since 2017.<sup>10</sup>

SES requests a license to launch, test, and operate SES-18 in the C-band in order to ensure continuity of service for customers at the 131° W.L. orbital location. SES is not seeking Commission authority to operate SES-18 in new frequencies or service areas. SES will commercialize the satellite capacity on SES-18 on a non-common carrier basis by negotiating contracts individually with its customers.

### **C. SES-19 Spacecraft**

SES-19 will act as an in-orbit spare satellite at the nominal 103° W.L. orbital location. To facilitate collocation of satellites at that location, SES seeks authority to operate SES-19 centered at 103.05° W.L. with an east-west stationkeeping tolerance of +/- 0.1 degrees. SES requests a license to launch and test SES-19 and to operate it in the C-band at SES's discretion in order to ensure continuity of service for C-band customers in that portion of the arc. SES will seek any necessary Commission authority if relocation of SES-19 is needed to restore service. SES is not seeking Commission authority to operate SES-19 in new frequencies or service areas. SES will commercialize the satellite capacity on SES-19 on a non-common carrier basis by negotiating contracts individually with its customers.

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<sup>8</sup> See Call Sign S2433, File Nos. SAT-LOA-20020104-00002 *et al.*, granted Dec. 29, 2003; SAT-MOD-20190813-00074, granted Oct. 23, 2019.

<sup>9</sup> See Call Sign S2447, File No. SAT-LOA-19880930-00038, granted Aug. 25, 1989.

<sup>10</sup> See Call Sign S2445, File No. SAT-MOD-20170810-00115, granted Nov. 22, 2017.

#### **D. SES-20 Spacecraft**

SES-20 will be positioned at 135° W.L. and will replace the C-band AMC-8 satellite and the C-band capacity of the AMC-4 satellite. AMC-8 has operated at 135° W.L. since 2020.<sup>11</sup> Prior to that, SES operated the AMC-7 spacecraft,<sup>12</sup> the AMC-10 spacecraft,<sup>13</sup> and the Satcom C-4 spacecraft launched in 1992 at this location.<sup>14</sup> AMC-4 has operated at 134.9° W.L. since 2017.<sup>15</sup>

SES requests a license to launch, test, and operate SES-20 in the C-band in order to ensure continuity of service for customers at the 135° W.L. orbital location. SES is not seeking Commission authority to operate SES-20 in new frequencies or service areas. SES will commercialize the satellite capacity on SES-20 on a non-common carrier basis by negotiating contracts individually with its customers.

#### **E. SES-21 Spacecraft**

SES-21 will be positioned at the nominal 103° W.L. orbital location and will replace the C-band capacity of the SES-3 satellite. To facilitate collocation of satellites at that location, SES seeks authority to operate SES-21 centered at 103.05° W.L. with an east-west stationkeeping

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<sup>11</sup> See Call Sign S2379, File No. SAT-MOD-20200413-00033, granted July 1, 2020. AMC-8 was originally jointly licensed to SES and Alascom, Inc., but last year the parties requested and received authority to transfer full licensing authority for the satellite to SES. See File No. SAT-T/C-20200810-00093, granted Oct. 27, 2020.

<sup>12</sup> See Call Sign S2155, File No. SAT-MOD-20150309-00010, granted May 21, 2015.

<sup>13</sup> See Call Sign S2432, File No. SAT-LOA-20020104-00001, granted Dec. 29, 2003.

<sup>14</sup> See Call Sign S2447, File No. SAT-LOA-19880930-00038, granted Aug. 25, 1989.

<sup>15</sup> See Call Sign S2135, File No. SAT-MOD-20170518-00073, granted July 31, 2017.

tolerance of +/- 0.1 degrees. SES-3 has operated at 103° W.L. since 2014.<sup>16</sup> Prior to that, SES's AMC-1 spacecraft<sup>17</sup> and the GSTAR I spacecraft launched in 1985 operated at this location.<sup>18</sup>

SES requests a license to launch, test, and operate SES-21 in the C-band in order to ensure continuity of service for customers at the 103° W.L. orbital location. SES is not seeking Commission authority to operate SES-21 in new frequencies or service areas. SES will commercialize the satellite capacity on SES-21 on a non-common carrier basis by negotiating contracts individually with its customers.

## **II. GRANT OF THE REQUESTED LICENSES WILL SERVE THE PUBLIC INTEREST AND IS CONSISTENT WITH COMMISSION PRECEDENT**

Authorizing launch, test, and operation of the SES-18, SES-19, SES-20, and SES-21 spacecraft will permit SES to provide service continuity and is fully consistent with Commission precedent. The Commission has expressly recognized a replacement expectancy for geostationary orbit (“GSO”) satellite operators:

Given the huge costs of building and operating GSO space stations, we have found that there should be some assurance that operators will be able to continue to serve their customers. Therefore, the Commission has stated that, when an orbit location remains available for a U.S. satellite with the technical characteristics of the proposed replacement satellite, it will generally authorize the replacement satellite at the same location.<sup>19</sup>

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<sup>16</sup> See Call Sign S2892, File Nos. SAT-RPL-20121228-00227 *et al.*, granted Apr. 4, 2014 (in part) & Apr. 2, 2015.

<sup>17</sup> See Call Sign S2445, File No. SAT-MOD-19930805-00031, granted in *GTE Spacenet Corp. and GE American Communications, Inc.*, 9 FCC Rcd 1271 (Com. Car. Bur. 1994).

<sup>18</sup> See *id.* at 1271-72 (discussing history of GSTAR I).

<sup>19</sup> *Amendment of the Commission's Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760, 10854-55 (2003) (footnotes omitted).

The Commission has also made clear that a replacement satellite need not be identical to the current spacecraft:

We do not require replacement satellites to be technically *identical* to the existing satellite. We recognize that next-generation satellites will incorporate satellites with technical advancements made since the previous generation satellite was launched. We do not intend to change this policy, which facilitates state-of-the-art systems. Rather, we will continue to assess only whether operations of the replacement satellite will be consistent with our international coordination obligations pursuant to regulations promulgated by the International Telecommunication Union.<sup>20</sup>

As discussed above, SES currently operates in the C-band frequencies at 131° W.L., 103° W.L., and 135° W.L., giving SES a replacement expectancy for those frequencies at those orbital locations. The C-band frequencies remain available for use by SES at each position, and operation of the proposed new C-band spacecraft will conform to the Commission's international coordination obligations. The planned deployments will allow SES to use state-of-the-art satellites to ensure long-term continuity of service for C-band customers, which is exactly what the Commission's long-standing replacement expectancy policy is designed to promote.

Authorizing SES-19 to be deployed as an in-orbit spare will further the same public interest objectives. By launching SES-19 and placing it at 103° W.L., SES will be able to expeditiously restore service as needed at that location, or at other SES C-band orbital locations subject to receipt of further Commission authority if restoration requires repositioning the space station.

The proposed new spacecraft are necessary to facilitate expedited transition of a portion of the C-band frequencies to terrestrial mobile operations while ensuring continuity of service to

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<sup>20</sup> *Id.* at 10857 (emphasis in original; footnotes omitted).

existing SES customers as contemplated in the C-Band Order and the SES Transition Plan.<sup>21</sup> SES has explained that deployment of replacement satellites at 131° W.L., 103° W.L., and 135° W.L. and an in-orbit spare at 103° W.L. is necessary to allow SES to continue serving its C-band customers once satellite use is limited to 200 MHz of downlink spectrum in the C-band. The in-orbit spare at 103° W.L. is similarly necessary to provide existing customers with the same “protection” rights that they currently enjoy in a 500 MHz environment. As SES explained in its Transition Plan, in 500 MHz of the C-band spectrum these protection rights could be met by transitioning services to another operating satellite. But with only 200 MHz of downlink bandwidth per satellite, the only realistic way to satisfy SES’s service restoration obligations is to co-locate an in-orbit spare at 103° W.L.<sup>22</sup>

SES’s request for authority to test the new satellites between 141.2° W.L. and 142.8° W.L. will enable verification of the satellites’ operating capabilities without disrupting existing services being provided from the nominal 131° W.L., 103° W.L., and 135° W.L. orbital locations.<sup>23</sup> The proposed testing will not cause harmful interference to the operations of any other spacecraft, as no satellites that use C-band frequencies operate within two degrees of the 141.2° W.L. to 142.8° W.L. orbital range.

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<sup>21</sup> As discussed in the SES Transition Plan, SES has determined the order for filling the orbital locations covered by the plan, but the specific satellites assigned to each location may change depending on when each manufacturer’s spacecraft are completed and launched. *See* SES Transition Plan at 9. In addition, SES has contracted for the construction of two ground spares that can be deployed in the event of an issue with one of the primary spacecraft described herein. *See id.* at 10. SES will amend the instant applications as necessary in the event the spacecraft orbital assignments change or a ground spare needs to be substituted for one of the primary satellites.

<sup>22</sup> *Id.* at 7-8.

<sup>23</sup> As discussed above, testing of some satellites may occur at their assigned orbital locations. In that event, SES will manage testing on a transponder-by-transponder basis to avoid disruption of ongoing services.



### III. THE COMMISSION SHOULD GRANT LIMITED SECTION 25.210(j) WAIVERS

SES seeks waiver of Section 25.210(j) of the Commission's rules to allow operation of the SES-19 and SES-21 satellites and testing of any of the satellites with an east-west stationkeeping tolerance of +/- 0.1 degrees. Grant of the requested waiver is consistent with Commission policy:

The Commission may waive a rule for good cause shown. Waiver is appropriate if special circumstances warrant a deviation from the general rule and such deviation would better serve the public interest than would strict adherence to the general rule. Generally, the Commission may grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.<sup>24</sup>

To facilitate joint operations of its collocated satellites at the nominal 103° W.L. orbital location, SES seeks authority to position SES-19 and SES-21 at 103.05° W.L. +/- 0.1 degrees. SES also proposes to use an east-west stationkeeping tolerance of +/- 0.1 degrees during spacecraft testing. SES accordingly requests a waiver of Section 25.210(j) of the Commission's rules, which requires GSO space stations to be operated within a +/- 0.05 degrees east-west stationkeeping box. The Commission has previously waived this rule based on a finding that allowing an increased station keeping volume would "not adversely affect the operations of other spacecraft, and would conserve fuel for future operations."<sup>25</sup>

The facts here fit squarely within this precedent. Allowing SES-19 and SES-21 to be maintained within an increased stationkeeping volume will have no effect on other operators, as the stationkeeping volume for these satellites will not overlap with that of any other operator's

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<sup>24</sup> *PanAmSat Licensee Corp.*, 17 FCC Rcd 10483, 10492 (Sat. Div. 2002) (footnotes omitted).

<sup>25</sup> *See, e.g., SES Americom, Inc.*, File Nos. SAT-MOD-20080124-00030 & SAT-AMD-20080311-00070, granted May 19, 2008, Attachment at ¶ 1.

spacecraft. In addition, allowing SES-19 and SES-21 to be flown at 103.05° W.L. in an expanded east-west station keeping volume of +/-0.1 degrees will result in fuel savings for the spacecraft. This will prolong the time during which the satellites will be available to provide service. Similarly, using an an east-west stationkeeping tolerance of +/- 0.1 degrees during IOT will minimize interruptions to the testing operations due to stationkeeping maneuvers, expediting IOT completion. Under these circumstances, waiving Section 25.210(j) will serve the public interest.

### III. CONCLUSION

For the foregoing reasons, SES seeks authority to launch the SES-18, SES-19, SES-20, and SES-21 spacecraft, perform in-orbit testing of the satellites, and operate them in the conventional C-band spectrum at the locations specified above. Grant of these applications will serve the public interest, convenience, and necessity by allowing SES to provide follow-on capacity to ensure service continuity.

Respectfully submitted,

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