

## REQUEST FOR LIMITED WAIVER OF THE COMMISSION'S REQUIREMENTS

O3b Limited (“O3b”) hereby requests a limited waiver of the Commission’s requirements, to the extent needed and on the terms described below, to conduct tests and demonstrations, and to provide commercial service, using Ka-band earth stations on vessels (“ESVs”) on up to three foreign-flagged ships. To ensure timely initiation of service, O3b asks that the waiver be granted no later than November 1, 2014.

O3b has filed an application requesting a license to operate up to one hundred 2.2m and one hundred 1.2m ESVs on U.S.-flagged ships.<sup>1</sup> The ESVs will communicate with O3b’s non-geostationary satellite orbit (“NGSO”) Fixed-Satellite Service (“FSS”) system.<sup>2</sup>

For statutory reasons, the Commission does not license ESVs that transmit from foreign-flagged ships.<sup>3</sup> The Commission requires, however, that ESVs on foreign-flagged ships not cause harmful interference to FCC-licensed radio stations when the foreign-flagged ships are located in U.S. waters.<sup>4</sup> In keeping with this requirement, O3b demonstrated in the Blanket ESV Application that its ESVs on foreign-flagged ships, like its ESVs on U.S.-flagged ships, will protect other stations.<sup>5</sup>

This waiver request concerns ESVs on up to three foreign-flagged ships (the “Three-Ship ESV Waiver Request”). As discussed below, O3b’s ESV operations on the three ships are not covered by the showings in the Blanket ESV Application, because the ESVs on the three ships will use different frequencies than the Blanket ESV Application frequencies. Beginning later this year, O3b intends to engage in tests and demonstrations of ESVs on the three ships (the “Tests”), and to provide commercial ESV service on the three ships (the “Service”). Each ship will have up to three ESVs.

For a portion of the time that the Tests are conducted and the Service is provided, the ships will be located in or near U.S. waters. O3b is not seeking an FCC license or special temporary authorization for the Tests and Service because, as

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<sup>1</sup> See File No. SES-LIC-20130528-00455 (the “Blanket ESV Application”). As used in this filing, the term “ships” includes all types of vessels that ESVs are permitted to serve.

<sup>2</sup> In September 2012, the Commission granted O3b a license to operate one of the gateways for this system in Haleiwa, Hawaii. See FCC File No. SES-LIC-20100723-00952 (granted September 25, 2012). In June 2013, the Commission granted O3b a license to operate a second gateway, which is located in Vernon, Texas. See FCC File No. SES-LIC-20130124-00089 (granted June 20, 2013).

<sup>3</sup> “Section 306 of the Communications Act provides that the Commission does not have the authority to license radio stations, such as ESVs, on vessels registered by foreign administrations (foreign-registered vessels).” *In the Matter of Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands*, 20 FCC Rcd 674, ¶ 122 (2004) (footnote omitted)(“*ESV R&O*”).

<sup>4</sup> *Id.*, ¶¶ 122-126.

<sup>5</sup> Blanket ESV Application, Narrative, Sections II.E and II.F.

discussed above, the Commission does not issue such authorizations for ESVs that are located on foreign-flagged ships. O3b, however, arguably requires a waiver of certain Commission requirements in order for the Tests and Service to be located in or near U.S. territorial waters. Out of an abundance of caution, O3b hereby requests these waivers.

The waivers concern the Commission's allocation for the frequencies that will be used in connection with O3b's Tests and Service. During the Tests and Service, O3b's ESVs will transmit on frequencies in the 28.35-28.4 GHz band and will receive on frequencies in the 18.3-18.6 GHz band. The Commission's Table of Allocations and Ka-band frequency plan provide that: (i) in the 28.35-28.4 GHz uplink band, GSO FSS systems are primary and NGSO FSS systems are secondary; and (ii) in the 18.3-18.6 GHz band, GSO FSS systems are primary and NGSO FSS systems are non-conforming.<sup>6</sup> The table and frequency plan make no provision for using NGSO FSS systems to communicate in these bands with earth stations on mobile platforms such as ships.

To the extent necessary, therefore, O3b requests a waiver of the Table of Allocations and the Ka-band frequency plan. The waiver would permit O3b's NGSO FSS system to communicate with ESVs on up to three foreign-flagged ships so that O3b can conduct the Tests and provide the Service when the ships are located in or near U.S. waters. O3b acknowledges that grant of this waiver will be without prejudice to Commission action on the Blanket ESV Application.

The Tests and Service will take place initially on the *Quantum of the Seas*, a Bahamas-flagged cruise ship operated by Royal Caribbean. There may be Tests and Service on up to two additional Bahamas-flagged ships. The Utilities Regulation and Competition Authority of the Bahamas is the administration that is responsible for authorizing O3b to operate its ESVs on these three ships, and O3b will not commence the Tests or the Service on any ship until this authority has been obtained.

The Three-Ship ESV Waiver Request is the third waiver request that O3b has filed in connection with operating ESVs on foreign-flagged ships in or near U.S. waters:

- O3b requested a blanket waiver permitting it to operate ESVs on foreign-flagged ships when the ships are in or near U.S. waters (the "Blanket ESV Waiver Request").<sup>7</sup> This waiver request, which is pending, is limited to

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<sup>6</sup> *In the Matter of Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, 11 FCC Rcd. 19005, ¶¶57-58 and 78 (1996). See also *In the Matter of Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, 15 FCC Rcd 13430, ¶¶ 28 and 34 (2000).

<sup>7</sup> See O3b's Blanket ESV Application, FCC File No. SES-LIC-20130528-00455, and O3b's Response to FCC Questions, October 25, 2013.

frequency bands which may be used by NGSO FSS systems on a primary basis in the United States (*i.e.*, the 28.6-29.1 and 18.8-19.3 GHz bands).

- O3b requested a six-month waiver to conduct tests and demonstrations using ESVs on two foreign-flagged ships operated by Royal Caribbean when the ships are in or near U.S. waters (the “Six-Month ESV Waiver Request”).<sup>8</sup> This waiver request, which the International Bureau granted,<sup>9</sup> is limited to frequency bands which may be used by NGSO FSS systems on a primary basis in the United States (*i.e.*, the 28.6-29.1 and 18.8-19.3 GHz bands).
- In this Three-Ship ESV Waiver Request, O3b is requesting a waiver to conduct Tests and provide Service on up to three foreign-flagged ships when the ships are in or near U.S. waters. This waiver request is limited to frequency bands which may be used by GSO FSS systems on a primary basis in the United States (*i.e.*, the 28.35-28.4 and 18.3-18.6 GHz bands).

In its order granting the Six-Month ESV Waiver Request, the International Bureau articulated the interference criteria the Commission applies to waiver requests associated with operating Ka-band ESVs in or near U.S. waters. The Bureau stated that the Commission will grant waivers such as these “when there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the non-conforming operator accepts any interference from authorized services.”<sup>10</sup>

O3b satisfies these interference criteria. For purposes of the Three-Ship ESV Waiver Request, O3b agrees to accept interference from services authorized by the Commission. As demonstrated in the attached Technical Statement, moreover, the operations covered by the Three-Ship ESV Waiver Request will not cause interference into any service authorized under the Table of Frequency Allocations. (O3b also shows, in Annex 2 of the Technical Statement, that the operations covered by the Three-Ship ESV Waiver Request are consistent with the Commission’s RF radiation limits.)

**Avoidance of interference to GSO FSS systems.** Article 22 of the ITU Radio Regulations sets forth standards for interference protection of GSO satellite networks from NGSO satellite systems. These standards are in the form of Equivalent Power Flux Density (“EPFD”) limits for downlink transmissions from NGSO satellite systems (No.

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<sup>8</sup> FCC File No. SES-MS-20131101-01139 (submitted Nov. 1, 2013).

<sup>9</sup> Letter from Jose Albuquerque, Chief, Satellite Division and Mark Settle, Chief, Policy and Rules Division, to Joslyn Read, O3b Limited, DA 14-64 (rel. Jan. 22, 2014).

<sup>10</sup> *Id.* at 3.

22.5C) and EPFD limits for uplink transmissions from NGSO satellite systems (No. 22.5D).<sup>11</sup>

O3b demonstrates in the Technical Statement that the operations covered by the Three-Ship ESV Waiver Request comply with these EPFD uplink and downlink limits.<sup>12</sup> Accordingly, the operations covered by the Three-Ship ESV Waiver Request will provide the requisite level of protection for GSO FSS systems. O3b also shows that the earth station antenna patterns for O3b's Three-Ship ESV Waiver Request uplink transmissions conform to the antenna performance mask specified in Sections 25.209(a) and (b) of the Commission's rules.

**Avoidance of interference to Fixed Service (i.e., terrestrial) stations.** Neither the Commission's Table of Allocations nor its Ka-band frequency plan has an allocation for Fixed Service stations in the bands covered by the Three-Ship ESV Waiver Request. There are no Fixed Service stations in the United States, therefore, that ESVs operating under the Three-Ship ESV Waiver Request would need to protect.

Out of an abundance of caution, O3b also has included in the attached Technical Statement a showing relating to Fixed Service stations that are located outside the United States. As discussed in the Technical Statement, O3b's downlink transmissions present no issue for these Fixed Service stations, because O3b complies with all applicable FCC and ITU downlink Power Flux Density limits.<sup>13</sup> O3b's uplink transmissions present no issue for these Fixed Service stations either, because as also discussed in the Technical Statement, O3b has procedures in place for addressing Fixed Service stations in countries that are within 100 km of its ESVs.<sup>14</sup> O3b already has implemented these procedures successfully for its ESVs that are operating in accordance with the terms of the grant of the Six-Month ESV Waiver Request.<sup>15</sup>

**Public interest analysis.** Grant of the Three-Ship ESV Waiver Request is in the public interest. The Commission has recognized the many benefits associated with ESVs. Making ESVs available, it has found, "advances the Commission's goals and objectives for market-driven deployment of broadband technologies," which "are becoming a fundamental component of modern communications."<sup>16</sup> The Commission also determined that the "maritime market for broadband via satellite-based communications continues to expand," and that ESVs make it possible to "deploy

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<sup>11</sup> The Commission has held that compliance with the ITU's EPFD limits provides a sufficient basis for an NGSO FSS system to operate on a noninterference basis in a band in which GSO FSS systems are primary. *See contactMEO Communications, LLC*, 21 FCC Rcd 4035, 4043-4044 (IB 2006).

<sup>12</sup> Technical Statement, Section A.7 at 6-14.

<sup>13</sup> Technical Statement, Section A.9 at 14-15.

<sup>14</sup> *Id.* at 15-16.

<sup>15</sup> *Id.* at 16.

<sup>16</sup> *ESV R&O*, 20 FCC Rcd 674, ¶ 4 (2004).

increasingly innovative broadband services ... to businesses and consumers on the high seas, coastlines, and inland waterways.”<sup>17</sup>

Grant of O3b’s waiver request will advance these important objectives by enabling O3b to evaluate equipment performance and customer acceptability and to expand the supply of maritime broadband services. O3b’s ESV operations offer faster connectivity at lower cost and with reduced latency. O3b’s maritime services will increase downward pressure on prices and foster innovation, all of which will redound to the benefit of maritime consumers and shipboard crew welfare. By any reasonable measure, therefore, grant of O3b’s waiver request is in the public interest.

**CALEA compliance.** O3b may provide services pursuant to the Three-Ship ESV Waiver Request that are within the scope of CALEA. Prior to initiating any service that is subject to CALEA, O3b will verify that it has CALEA-compliant network equipment and will file, pursuant to Section 1.20005 of the Commission’s rules, the policies and procedures it has developed for ensuring compliance with CALEA.

### CONCLUSION

Accordingly, and for good cause shown, O3b’s request for a limited waiver of the Commission’s requirements, commencing no later than November 1, 2014, should be granted.

Respectfully submitted,

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<sup>17</sup> *Id.*