

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

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In the Matter of)
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Kacific Broadband Satellites) File No.: SES-LIC-_____ - _____
International Ltd.)
)
Application for Blanket Earth Station) Call Sign: _____
Authorization and Authority to)
Communicate with the Kacific-1 Satellite)
_____)

**APPLICATION FOR BLANKET EARTH STATION AUTHORIZATION AND
AUTHORITY TO COMMUNICATE WITH THE KACIFIC-1 SATELLITE**

Kacific Broadband Satellites International Ltd. (“Kacific”) seeks blanket authority to operate up to 1000 earth station antennas to communicate with the JCSAT-18 satellite (a.k.a. “Kacific-1”),¹ using the 29.6 – 29.7 GHz and 29.75 – 29.8 GHz bands (Earth-to-space) and the 19.7 – 20.2 GHz bands (space-to-Earth).² Pursuant to Section 25.137(a) of the Commission’s Rules, 47 C.F.R § 25.137(a), Kacific also requests authority for the Kacific-1 satellite, located at 150° E.L., to serve the U.S. market in the relevant frequency bands. The earth stations will be deployed in the U.S. territories of the Commonwealth of the Northern Mariana Islands (“CNMI”) and American Samoa.³ Blanket authorization of the earth stations and associated U.S.

¹ The Kacific-1 satellite is a joint JCSAT-18/Kacific-1 payload, which operates under a combination of the N-SAT-Y12-150E and N-SAT-Y15-150E ITU satellite network filings submitted by the administration of Japan. The satellite bus is operated by SKY Perfect JSAT Corporation (“JCSAT”), while Kacific operates the Ka-band payload.

² The Kacific-1 satellite will operate in the 19.8 – 19.95 GHz and 20.05 – 20.125 GHz bands for downlinks in American Samoa and CNMI, respectively, and is also capable of using the full 19.7-20.2 GHz band to support operations in American Samoa. Additional details, including related uplinks, are provided in the Technical Appendix. *See* Attachment A, Technical Appendix, § 2.

³ 47 C.F.R. § 2.105(a) provides that the operation of stations in the Pacific insular areas (including American Samoa and CNMI located in Region 3 is generally governed by the Region 3 Table (*i.e.*, column 3 of § 2.106). Operations in the 19.7-20.2 GHz band and 29.6-29.7 GHz and 29.75-29.8 GHz bands are considered primary in both Region 3 and Region 2 and Kacific complies with the relevant footnotes for both regions, and thus conforms to the International Table of Frequency Allocations.

market access for the Kacific-1 satellite will enable Kacific to offer critical communications services in these U.S. territories, providing broadband connectivity to schools, hospitals, businesses, governmental organizations, and the general community. This application may be routinely processed consistent with the Commission's rules.⁴

I. INTRODUCTION

The Kacific-1 satellite is licensed by Japan and was launched in December 2019 to stream low-cost, high-speed, reliable broadband via 56 spot beams. Its coverage extends over 25 countries in the Asia Pacific region with populations spread across many islands, mountainous, and rural regions.

With the outbreak of Covid-19 and the migration to online platforms by many government and commercial organizations, capacity in these remote locations has been strained. These underserved and hard-to-reach regions urgently need additional, affordable capacity to meet current and future demand. With this application, Kacific seeks to offer that much-needed capacity to ease this strain on existing telecommunications facilities.

Kacific demonstrates in this application that it is legally, technically, and otherwise qualified to operate the earth stations; that the Kacific-1 satellite should be authorized to serve the U.S. market; that the proposed operations are compliant with applicable Commission rules and policies; and that grant of this application would serve the public interest, convenience, and necessity.

II. DISCUSSION

The Commission permits non-U.S. licensed satellites to access the U.S. market through applications for earth stations upon establishing compliance with Sections 25.114 and 25.137 of

⁴ 47 C.F.R. § 25.103 (defining “[r]outine processing or licensing”).

the Commission's Rules,⁵ and demonstrating that the public interest would be served by such authority. Kacific provides information regarding its legal qualifications in FCC Form 312 and attachments thereto. This application and accompanying information, including a waiver request, establish that grant of the blanket earth station license and U.S. market access for the Kacific-1 satellite would be consistent with the Commission's rules and policies.⁶

A. Spectrum Usage

Kacific seeks authority to operate its earth stations and to serve the U.S. market using the Kacific-1 satellite in CNMI and American Samoa using the 19.7-20.2 GHz (space-to-Earth), and 29.6-29.7 GHz and 29.75-29.8 GHz (Earth-to-space) bands. The United States Table of Frequency Allocations ("Table of Allocations") provides that FSS operations are co-primary with mobile-satellite service ("MSS") operations in these bands.⁷ Kacific summarizes below material issues associated with compliance with the Table of Allocations and related Commission rules.

Kacific's proposed spectrum usage is compatible with the authorized Ka-band operations. Section 25.132(a)(1) provides that earth stations operating in the 29.6-29.8 GHz (Earth-to-space) band must demonstrate compliance with Section 25.209. As demonstrated in the Technical Appendix and associated antenna gain patterns attached thereto, the proposed earth station terminals conform to the applicable antenna performance standards in Section 25.209.⁸ The

⁵ 47 C.F.R. §§ 25.114 & 25.137.

⁶ See Attachment B, Regulatory Compliance Matrix.

⁷ See 47 C.F.R. § 2.106.

⁸ 47 C.F.R. § 25.209. A breakdown of the antennas and utilized frequency bands can be found in the Schedule B, attached hereto.

antennas also meet the performance requirements in Section 25.218⁹ and otherwise conform to the input power spectral density of 3.5 dBW/MHz set forth in Section 25.212.¹⁰

Kacific's operations will be fully compliant with the Commission's two-degree spacing policies including downlink operations consistent with the power flux-density limit of -118 dBW/m²/MHz limit set forth in Section 25.140 and associated uplink EIRP density envelopes in §25.218(i),¹¹ and therefore will not cause harmful interference to any other authorized user of the spectrum and otherwise will be consistent with Commission precedent.¹² The Kacific-1 satellite will also be operated consistent with existing and future coordination agreements, as applicable. For these reasons, this application fully complies with the policies articulated in the Space Station Licensing Reform Order regarding processing of applications for GSO-like spacecraft.¹³

Furthermore, there are no U.S.-authorized, co-frequency satellites operating within six degrees of the Kacific-1 satellite's location. Accordingly, coordination with co-frequency FSS and earth station in motion ("ESIM")¹⁴ operations is not anticipated. Kacific will coordinate, as necessary or appropriate, with authorized operations in the requested frequency bands.¹⁵

⁹ 47 C.F.R. § 25.115(g)(2) (noting that an applicant that certifies that a proposed antenna's measured gain pattern conforms to relevant standards in § 25.209(a) and (b) and that input power density to the antenna will not exceed the relevant limit in § 25.211 or § 25.212 need not provide off-axis EIRP density plots).

¹⁰ 47 C.F.R. § 25.212.

¹¹ See Technical Description, at A.5-6; see also 47 C.F.R. § 25.140(a)(3)(iii).

¹² See 47 C.F.R. § 25.103 ("A GSO FSS space station operating in the ... conventional Ka-band within the limits on downlink EIRP density or PFD specified in §25.140(a)(3) and communicating only with earth stations operating in conformance with routine uplink parameters specified in §25.211(d), §25.212(c), (d), (e), or (f), or § 25.218").

¹³ See Amendment of the Commission's Space Station Licensing Rules and Policies, 18 FCC Rcd 10760, ¶ 113 (2003).

¹⁴ See 47 C.F.R. § 25.228.

¹⁵ In the bands between 19.7 GHz and 20.2 GHz, Federal space stations in both GSO and NGSO and associated earth stations in the FSS (space-to-Earth) may be authorized on a primary basis if they are located outside the arc, measured from east to west, 70-120° West longitude. 47 C.F.R. § 2.106, footnote US334. To the extent applicable, Kacific will coordinate with Federal users which may be impacted by the proposed operations.

B. Kacific-1 Satellite

The Kacific-1 satellite is nominally positioned at 150° E.L. and is licensed by Japan, a member of the World Trade Organization (“WTO”) for services covered under the WTO Basic Telecommunications Agreement. Because Japan is a member country in the WTO, Kacific is not required to make the effective competitive opportunities showing set out in Section 25.137 of the Commission’s Rules.¹⁶

Pursuant to Section 25.137(d) of the Commission’s Rules, 47 C.F.R. § 25.137(d), Kacific demonstrates in this application that the proposed operations of the Kacific-1 satellite will comply with applicable Commission requirements for non-U.S. licensed satellites to operate in the United States. Kacific provides the attached Technical Appendix, Schedule S, and associated materials containing information relating to the technical and operational characteristics of the Kacific-1 satellite. Kacific notes that because the Kacific-1 satellite is in orbit and currently operating, the Commission’s requirements relating to the posting of bond, milestones are not applicable.¹⁷ Kacific will otherwise comply with reporting requirements and service rules, to the extent applicable.¹⁸

Kacific anticipates the satellite’s end-of-life to be no earlier than 2034. Kacific has provided a space debris mitigation plan in the attached Technical Appendix to demonstrate compliance with the orbital debris mitigation and satellite end-of-life rules and policies.¹⁹

¹⁶ 47 C.F.R. § 25.137.

¹⁷ 47 C.F.R. § 25.137(d)(4); *see also* 47 C.F.R. § 25.164 & § 25.165.

¹⁸ 47 C.F.R. § 25.137(d).

¹⁹ *See* Attachment A, Technical Appendix, Section A.14.

C. Radiation Hazard Analysis

A radiation hazard analysis for the proposed antenna is attached hereto as Attachment C.²⁰ As demonstrated by the results of the analysis, the maximum permissible exposure limit (“MPE”) for protection of the General Population/Uncontrolled Exposures – 1 mW/cm² averaged over a thirty-minute period – is met. Remote terminal shut-off by the Kacific Network Operation Center (“KNOC”) coupled with the terminals’ use of uplink power control and non-continuous operation, further ensures that the general population will not be exposed to harmful levels of electromagnetic radiation.

D. Public Interest Considerations

The two Internet service providers (“ISPs”) currently serving CNMI are DoCoMo Pacific and IT&E. These ISPs have not significantly improved broadband Internet coverage in CNMI over the last decade, especially on the two islands of Tinian and Rota. With the outbreak of Covid-19 and the migration to online platforms by schools, hospitals, businesses, governmental organizations, and the general community, current ISP networks have understandably come under even greater strain, and Internet traffic has slowed considerably. Kacific seeks to offer extra capacity to ease this strain on existing facilities.

There is an urgent need to bolster the current situation with additional capacity that is both highly affordable and geographically wide-reaching. Indeed, Kacific’s application is supported by members of the CNMI House of Representatives recognizing the critical need for reliable and competent internet service to the underserved communities of CNMI.²¹ Current ISPs do not serve many remote areas because the high cost of infrastructure outweighs the small

²⁰ See Attachment C, Radiation Hazard Report.

²¹ See Attachment D, Letter of Endorsement.

revenue to be gained from these communities. Kacific is not limited by the placement of ground infrastructure and can offer connectivity in otherwise hard-to-reach regions without needing to factor in heavy infrastructure investments.

Although IT&E announced increased bandwidth in May 2020, it has so far failed to improve Internet traffic because it is navigating a bottleneck in its service distribution to subscribers. CNMI has also experienced incidents of undersea cable cuts due to strong currents and bad weather. The damage to these cables caused CNMI to be isolated from the rest of the world for a few days, and cable repair times can take up to 3 months depending on the availability of specialized repair ships. In contrast, where a cable outage in American Samoa occurred March 2020, Kacific was able to restore the link in just a few days.

Current ISPs in CNMI have not been able to fully step up to the challenge of providing the community with sufficient Internet capacity and coverage at low cost. While their role in CNMI continues to be essential, their business model has allowed gaps in the market that Kacific can fill. With this authorization, Kacific will be able to match current offerings at competitive rates, to support the market where there is insufficient coverage. Grant of this application therefore strongly supports the public interest.

E. FAA Notification

The proposed antennas are exempt from notification to the FAA under Section 17.7(e)(1) of the Commission's rules because the antennas are adjacent to structures of greater overall height or will otherwise be less than 6.1 m in height.²²

²² See 47 C.F.R. § 25.115(j); see also 47 C.F.R. § 17.7(e).

F. Waiver Requests

The Commission may waive any of its rules for “good cause” shown.²³ In general, waiver is appropriate if (i) special circumstances warrant a deviation from the general rule; and (ii) such deviation would better serve the public interest than would strict adherence to the rule.²⁴ As discussed below, special circumstances justify grant of the requested waiver and grant will not undermine the policy objectives of the rule and otherwise be consistent with the public interest to permit the Kacific-1 space station to access the U.S. market.

Kacific respectfully requests a waiver of Section 25.210(f) of the Commission’s rules concerning full frequency reuse of the of the 19.7-20.2 GHz, 29.6 – 29.7 GHz, and 29.75 – 29.8 GHz bands. The space station coverage to the United States is limited, covering only American Samoa and CNMI. The uplink and downlink polarization transceivers are not capable of being switched by ground command due to the technical design of the satellite and therefore it is not possible to employ dual-orthogonal linear polarization and frequency reuse across the beams. Accordingly, a waiver of Section 25.210(f) is necessary to ensure Kacific can provide critical broadband services to these remote U.S. territories.

Grant of this waiver would further the public interest through provision of cost-effective broadband access to users through the Kacific-1 satellite and is otherwise consistent with Commission precedent.²⁵ As such, Kacific respectfully requests a waiver of the rule.

²³ See 47 C.F.R. § 1.3; *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

²⁴ See *Northeast Cellular*, 897 F.2d at 1166; see also *WAIT Radio*, 418 F.2d at 1157.

²⁵ See *AST Telecom, LLC*, File No. SES-MFS-20090106-00002 (granted Sept. 18, 2009) (granting a waiver of Section 25.210(f)).

III. CONCLUSION

For the reasons discussed herein, Kacific respectfully requests blanket authorization of its earth stations in the U.S. territories of CNMI and American Samoa. Kacific further seeks to serve the U.S. market using the Kacific-1 satellite in the relevant Ka-band frequencies. Grant of this application would serve the public interest by enabling Kacific to provide high-speed connectivity to remote U.S. territories, and ensure schools, hospitals, businesses, governmental organizations, and other users will have access to affordable and reliable satellite broadband services.