Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Eutelsat S.A.	)	File No.:
	)	Call Sign: S3055
Petition for Declaratory Ruling to	)	
Modify the U.S. Market Access Grant	)	
for EUTELSAT 139 West A	)	

PETITION FOR DECLARATORY RULING

Eutelsat S.A. ("Eutelsat") pursuant to Section 25.137(f) of the Commission's Rules, 47 C.F.R. § 25.137(f), hereby files this petition for declaratory ruling to modify the U.S. market access authority granted for the EUTELSAT 139 West A satellite (the "Modification Petition").[1] Specifically, Eutelsat seeks to add new frequencies and expand the service area of the satellite with new South Pacific beams. In addition, out of an abundance of caution and only to the extent necessary to grant this Modification Petition, Eutelsat requests waiver of Footnote NG52 to facilitate communications with a limited number of U.S. gateways that will support U.S. and foreign earth stations in motion ("ESIMs") operating in the United States and internationally. Eutelsat is legally, technically, and otherwise qualified to hold the requested authority, as modified, and grant of this Modification Petition would serve the public interest, convenience, and necessity.

I. INTRODUCTION AND BACKGROUND

EUTELSAT 139 West A, a French-licensed satellite, will provide Ku-band fixed-satellite service ("FSS") connectivity to a range of applications, including communication links with aeronautical and maritime ESIMs and associated gateway earth stations, from the nominal 139° W.L. orbital location.[2] Through this Modification Petition, Eutelsat seeks to enhance its

[1] File No. SAT-PDR-20191017-00115, Call Sign S3055 (grant stamp Apr. 8, 2020) ("*E139WA Grant*").

[2] Given the existence of a U.S.-licensed satellite at 139°W.L., Eutelsat will operate EUTELSAT 139 West A at the 139.2° W.L. orbital location to avoid overlap of the satellites' station-keeping boxes.

U.S. market offering by serving the U.S. market and U.S.-licensed ESIMs in the 10.7-10.95 GHz and 11.2-11.45 GHz (space-to-Earth) bands and 12.98-13.25 GHz (Earth-to-space) bands, and using new South Pacific beams in the 10.95-11.20 GHz and 12.5-12.75 GHz (space-to-Earth) bands and 14.0-14.5 GHz (Earth-to-space) bands.

Eutelsat previously requested and received authority for EUTELSAT 139 West A to serve the U.S. market from 139° W.L.,[3] where the France has International Telecommunication Union ("ITU") date priority in Ku-band frequencies.[4] The satellite is in route to 139° W.L., will arrive at that location later this month, and will commence operating from that location subject to appropriate Commission authority as soon as practicable thereafter.[5]

II. DISCUSSION

Eutelsat seeks to enhance service to customers using the EUTELSAT 139 West A satellite by facilitating limited U.S. gateway access and offering new Ku-band frequencies and beams for ESIM operations. Eutelsat addresses spectrum compatibility and other issues associated with these enhancements in this Modification Petition. As discussed herein, grant of this Modification Petition will serve the public interest by allowing Eutelsat to meet U.S. market demand for satellite-based, in-flight and maritime connectivity and other services.

The Commission will allow non-U.S. licensed satellites to access the U.S. market upon their establishing compliance with Sections 25.114 and 25.137 of the Commission's Rules, 47 C.F.R. §§ 25.114 & 25.137, and demonstrating that the public interest would be served by such access. The Commission concluded in the *E139WA Grant* that the public interest would be

[3] The EUTELSAT 139 West A satellite was previously granted U.S. market access to operate in the 10.95-11.2 GHz, 11.45-11.7 GHz, 12.5-12.75 GHz, and 13.75-14.5 GHz bands. *See E139WA Grant*.

[4] The EUTELSAT 139 West A satellite will operate under French F-SAT-N4-139W, F-SAT-N6-139W, and F-SAT-30B-139W satellite network filings at the ITU.

[5] Although the satellite was in-orbit and prepared to relocate at the time of the *E139WA Grant*, Eutelsat informed the Commission in its June 30, 2020 satellite operator report that the satellite had not yet arrived at its intended location and that it would inform the Commission when it did so (*see* https://ecfsapi.fcc.gov/file/10630096670775/Eutelsat%20SA%20Annual%20Report_200630.pdf).

served by authorizing Eutelsat to provide FSS and mobility services from the 139° W.L. orbit location. In this Modification Petition, Eutelsat demonstrates that the addition of new frequencies and beams to EUTELSAT 139 West A's existing authority, as well as operations with a limited number of gateway earth stations in the United States, also would be consistent with the Commission's rules and policies and would serve the public interest.

A. Legal Qualifications

The legal qualifications of Eutelsat are a matter of record before the Commission. Eutelsat and its affiliates operate many satellites that have been approved by the Commission for inclusion on the Permitted Space Station List or as authorized points of communication for U.S. earth station licensees,[6] including EUTELSAT 139 West A.[7] Eutelsat provides additional information regarding its legal qualifications in FCC Form 312 and relevant attachments to this Modification Petition. Eutelsat seeks modification of the *E139WA Grant* to enhance and expand the FSS and mobility services available to U.S. customers.

B. Technical Qualifications

Pursuant to Section 25.137(d) of the Commission's Rules, 47 C.F.R. § 25.137(d), Eutelsat demonstrates in this Modification Petition that the expanded operations of EUTELSAT 139 West A proposed herein comply with applicable Commission requirements. The EUTELSAT 139 West A satellite will operate consistent with the Commission's two-degree spacing levels and associated requirements to facilitate spectrum sharing in each relevant frequency band and, thus, will be compatible with the operations of U.S.-licensed satellites and other satellites authorized to serve the United States. Eutelsat provides the

[6] *See* FCC Space Station Approval List at https://www.fcc.gov/approved-space-station-list.

[7] *See generally E139WA Grant*.

attached Engineering Statement, Schedule S, and associated materials containing information relating to the operational characteristics of the EUTELSAT 139 West A satellite.[8]

1. Spectrum Compatibility

Eutelsat seeks to add the 10.7-10.95 GHz and 11.2-11.45 GHz (space-to-Earth) and the 12.98-13.25 GHz (Earth-to-space) bands to the market access authority for EUTELSAT 139 West A. The Commission has previously granted authority for satellite operations in all of these bands and Eutelsat affirms that the EUTELSAT 139 West A satellite and associated earth stations will operate consistent with similar approved operations.[9] Spectrum compatibility issues for these additional bands are discussed below.

The United States Table of Frequency Allocations ("Table of Allocations") in Section 2.106 of the Commission's Rules, 47 C.F.R. § 2.106, identifies conditions for spectrum use by FSS networks in the 10.7-10.95 GHz, 11.2-11.45 GHz, and 12.98-13.25 GHz bands. Space stations in the FSS operating in any portion of these bands shall employ state-of-the-art full frequency reuse, through either the use of orthogonal polarizations within the same beam and/or the use of spatially independent beams.[10] The EUTELSAT 139 West A satellite complies with this requirement.

Footnote NG52 to the Table of Allocations limits the use of certain bands by geostationary orbit ("GSO") FSS satellites, including the 10.7-10.95 GHz and 11.2-11.45 GHz (space-to-Earth) and the 12.98-13.25 GHz (Earth-to-space) bands, to "international systems" (*i.e.*, other than domestic systems) except as provided in Footnote NG527A.[11] In addition to ESIMs subject to Footnote NG527A, a limited number of gateway earth stations

[8] Although this Modification Petition focuses on the new frequencies and beams, the Schedule S and Engineering Statement reflect the full range of frequencies and beams to be used by the satellite.

[9] *See generally* FCC Space Station Approval List.

[10] *See* 47 C.F.R. § 25.210(f).

[11] *See* 47 C.F.R. § 2.106 at Footnotes NG52, NG527A.

communicating in these bands with EUTELSAT 139 West A will be located in the United States and will support these ESIM operations.

Given its broad service area and communications with ESIMs located within and outside the United States, the EUTELSAT 139 West A satellite is part of an international system (*i.e.*, not a domestic-only system). Although the plain language and intent of Footnote NG52 are satisfied, out of an abundance of caution Eutelsat requests a waiver of this footnote to the extent necessary to permit U.S. gateway operations in bands subject to Footnote NG52. It also seeks removal or appropriate modification of Condition 4 in the *E139WA Grant*, which limits EUTELSAT 139 West A's operations in specific bands subject to Footnote NG52 to "international operations."[12]

In the 10.7-10.95 GHz and 11.2-11.45 GHz bands, FSS operations are co-primary with terrestrial fixed service ("FS") operations and the band is available for use by ESIMs communicating with GSO FSS satellites, subject to the provisions in the Table of Allocations[13] (including not claiming protection from FS transmissions[14] and taking all practicable steps to protect radio astronomy observations in the adjacent bands from harmful interference[15]). Eutelsat will comply with these provisions, as well as power flux density ("PFD") limits in the band, to ensure compatibility with FS operations.

EUTELSAT 139 West A's operations in the 10.7-10.95 GHz, 11.2-11.45 GHz, and 12.98-13.25 GHz bands will be in accordance with the provisions of Appendix 30B of the ITU Radio Regulations pursuant to Section 25.140(a)(3)(v) and footnote 5.441 to the Table of Allocations.[16] As demonstrated in the attached Schedule S and Engineering Statement,

[12] *See E139WA Grant* at Condition 4.

[13] *See* 47 C.F.R. §25.202(a)(10)(i).

[14] *See* 47 C.F.R. § 2.106 at Footnote NG527A.

[15] *See id.* at Footnote US211.

[16] *See id.* at Footnote 5.441, § 25.140(a)(3)(v). Footnote 5.441 states that the use of the band 10.7-10.95 GHz and 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by GSO

EUTELSAT 139 West A downlink operations comply with applicable PFD limits, which will serve to protect terrestrial FS operations in the band. There is also little potential for interference with non-geostationary orbit ("NGSO") FSS systems that may operate in the associated bands given this PFD compliance.[17] Moreover, the closest U.S. Appendix 30B ITU filing is 14 degrees away from the EUTELSAT 139 West A satellite, and there are no compatibility issues with the proposed operations under Appendix 30B with respect to this filing.[18] Thus, the Commission can authorize EUTELSAT 139 West A to operate with U.S.-licensed earth stations in these bands.[19]

2. Satellite Beam Pointing

The EUTELSAT 139 West A satellite will include new fixed South Pacific Ku-band uplink and downlink beams to serve U.S. and foreign ESIM customers and potentially the United States.[20] The Schedule S and Engineering Statement submitted herewith include the beam characteristics as currently planned. To the extent the beams are reoriented in response to customer requirements, Eutelsat will conform to all Commission operating requirements in the new orientation, including permissible transmit and receive power levels. Thus, the

systems in the FSS must be compliant with the provisions of Appendix 30B. Similarly, Section 25.140(a)(3)(v) requires that an applicant submit a statement that the proposed operation will incorporate the applicable requirements of Appendix 30B and a demonstration of compatibility with other U.S. ITU filings under that appendix.

[17] EUTELSAT 139 WEST A downlink operations comply with applicable PFD limits, and authorized NGSO systems cannot claim protection from GSO satellite networks in the FSS operating in accordance with the Radio Regulations.

[18] *See* ITU Space Network List Online, *available at* https://www.itu.int/snl/freqtab_snlplan.html.

[19] The Commission has authorized numerous other satellites to operate in Appendix 30B bands. *See, e.g.*, File No. SAT-MOD-20090529-00063, Call Sign S2358; File No. SAT-MOD-20070529-00075, Call Sign S2633; and File No. SAT-LOA-20151231-00089, Call Sign S2948.

[20] EUTELSAT 139 West A's South Pacific beams may not effectively serve U.S. territory in their initial orientation, but they can serve U.S.-licensed ESIMs and could potentially be reoriented to effectively cover U.S. territory (*e.g.*, Hawaii).

spectrum compatibility demonstration included herein would be valid and applicable to any satellite beam orientation adjustments that Eutelsat might implement.

3. Inclined Orbit

The EUTELSAT 139 West A satellite will operate in a slightly inclined orbit at the nominal 139° W.L. orbital location. It will arrive on-station with an inclination of 0.9°, which is expected to increase at a rate of 0.9° per year. Eutelsat anticipates the satellite's end-of-life to be no earlier than mid-2025, even considering the impact of inclined orbit operations.

4. Space Debris Mitigation

Eutelsat provided a EUTELSAT 139 West A Space Debris Mitigation Plan, as well as accompanying waiver requests, as part of its prior petition for market access.[21] The Commission reviewed this plan and granted the requested waivers in the *E139WA Grant*. As the EUTELSAT 139 West A satellite is already in orbit, the previously submitted Space Debris Mitigation Plan and waivers remain unchanged and Eutelsat hereby incorporates them by reference.

C. Public Interest Considerations

The Commission has previously concluded that allowing EUTELSAT 139 West A to serve the U.S. market would further serve the public interest. Expanding the satellite's frequencies and available coverage and improving operations with a limited number of gateway earth stations in the United States will allow Eutelsat to better satisfy U.S. demand for satellite mobility and other FSS services. Grant of this Modification Petition also will enhance the operations of U.S. ESIM licensees by facilitating access to additional Ku-band spectrum and a broader area of operations. Finally, enabling EUTELSAT 139 West A to access additional spectrum and coverage available from its intended orbit location will further

[21] *See* Eutelsat S.A., Petition for Declaratory Ruling, File No. SAT-PDR-20191017-00115, Call Sign S3055 ("*E139WA Petition*") at Attachment D, EUTELSAT 139 West A Space Debris Mitigation Plan.

the interests of spectrum efficiency and enhance competition in satellite services. As a result, grant of this Modification Petition will strongly serve the public interest.

D. Waiver Request

Out of an abundance of caution and only to the extent necessary to grant this Modification Petition, Eutelsat requests a limited waiver of Footnote NG52 of the Table of Allocations to facilitate EUTELSAT 139 West A operations with a limited number of gateways located in the United States in the 10.7-11.7 GHz (space-to-Earth) and 12.98-13.25 GHz (Earth-to-space) bands.[22] The Commission has authority to grant waivers of its rules for "good cause shown."[23] In general, good cause exists if grant of a waiver would not undermine the purposes of the rule and would otherwise serve the public interest.[24] Good cause exists to grant this waiver, if necessary to authorize limited U.S. gateway operations in these bands, and grant otherwise would be consistent with Commission policy.

Footnote NG52 limits the use of these bands by geostationary satellites in the FSS to international systems (*i.e.*, other than domestic systems).[25] EUTELSAT 139 West A's full coverage area includes North and South America and wide expanses of the Pacific Ocean, and usage will not be limited to U.S. territory even if it communicates with a limited number of gateway earth stations or ESIMs operating in U.S. airspace. Moreover, EUTELSAT 139 West A will serve U.S. and foreign-registered aircraft traversing U.S., foreign, and international airspace.[26] Accordingly, the EUTELSAT 139 West A satellite is part of an

[22] *See* 47 C.F.R. § 2.106, Footnote NG52; *see also WAIT Radio*, 418 F.2d 1153.

[23] *See* 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

[24] *WAIT Radio*, 418 F.2d at 1157; Intelsat North America LLC, *Order*, 22 FCC Rcd 11989 ¶6 (2007).

[25] Footnote 52 incorporates the exception provided in Footnote NG527A for ESIMS in specific bands, not including the 12.75-13.25 GHz uplink band. Accordingly, a waiver of Footnote NG52 is needed for ESIM operations in that band if the Commission does not consider the system to be "international."

[26] As noted above, a limited number of gateway earth stations will be located in the United States and will support Ku-band ESIM operations. The inherently international nature of Eutelsat's offering is fully consistent with the policies underlying Footnote NG52's international system requirement.

international system, the limitation in Footnote NG52 should not apply, and Condition 4 in the *E139WA Grant* should be removed or appropriately modified.

The purpose of NG52 is to limit the number of FSS earth stations with which co-primary FS stations would need to coordinate.[27] Eutelsat's downlink operations in the 10.7-11.7 GHz band meet the PFD limits at the surface of the Earth to protect FS stations in the band.[28] Earth station operations in this band will be receive-only and thus "not capable of causing interference into FS stations" operating in the bands.[29] Furthermore, consistent with the underlying policy of Footnote NG52, allowing a limited number of gateway earth stations to operate in the United States in support of ESIMs operating within and outside U.S. territory will not create more burden to FS stations than if these U.S. gateways communicate only with ESIMs located outside of U.S. territory. Because limited U.S. gateway receive operations pose no interference concerns and will not unduly constrain co-frequency FS operations in United States, the Commission may grant the requested waiver in the 10.7-11.7 GHz downlink band.

In the 12.98-13.25 GHz uplink band, transmit gateway earth station operations will be coordinated with other licensed systems on the same basis, regardless of whether these gateways communicate with ESIMs located within or outside U.S. territory. As a result, the Commission also may grant the requested waiver in the 12.98-13.25 GHz uplink band.

EUTELSAT 139 West A's support for ESIM operations provides an independent basis for waiver of Footnote NG52. Assuming an international system must operate with

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[27] *See* Amendment of Part 2 of the Commission's Rules to Conform, to the Extent Practicable, with the Geneva Radio Regulations, as Revised by the Space WARC, Geneva, 1971, Report & Order, 26 RR 2d 1257, 1263-65 (1973).

[28] *See E139WA Petition*, Attachment C – Engineering Statement at 8-9.

[29] *See DIRECTV Waiver*, Narrative at 4 (*citing* Satellite Services, 26 RR 2d 1257, 1263-65. See also EchoStar KuX Corporation Application for Authority to Construct, Launch and Operate a Geostationary Satellite Using the Extended Ku-band Frequencies in the Fixed-Satellite Service at the 83º W.L. Orbital Location, *Order and Authorization*, DA 04-3162, 9 (Int'l Bur., Sept. 30, 2004)).

remotes located outside the United States only, then a U.S. gateway communicating with ESIMs located in international or foreign airspace would not require a waiver of Footnote NG52. Given the mobile nature of ESIM operations, however, a single U.S. gateway can communicate with ESIMs (*i.e.*, be part of the same network) within the United States, outside the United States, or both simultaneously. Furthermore, the same U.S. gateway communicating with a single ESIM that leaves U.S. airspace would require a waiver until the ESIM crosses the border, at which time it would be considered part of an international system. Although Eutelsat believes Footnote NG52 is satisfied because EUTELSAT 139 West A is part of an international system, the footnote can be waived because there is no basis to distinguish between domestic and international ESIM operations for purposes of Footnote NG52 if the ESIMs will operate both within and outside the United States.

Finally, Eutelsat submits that much of the Commission's Footnote NG52 waiver precedent is inapposite. In both the uplink and downlink bands, the Commission has waived the international system requirement to enable domestic service with fixed customer earth station terminals operating on an unprotected, non-interference basis and limited the number of gateway earth stations that may access the satellite.[30] Such limitations are not appropriate in this case because ESIM operations are permissible under Footnote NG527A and the Commission can condition or otherwise limit gateway operations with EUTELSAT 139 West A in relevant earth station licenses. Thus, the Commission need not impose unprotected, non-interference status on U.S. gateway earth stations supporting ESIM operations in the context of a waiver of Footnote NG52 for EUTELSAT 139 West A.

[30] *See, e.g.*, Intelsat License LLC, File No. SAT-LOA-20130722-00097, at 5 (Grant Stamp May 21, 2015) (seeking a waiver to operate a domestic service with fixed customer earth stations in the 10.7-11.7 GHz band) ("*Intelsat Waiver*"); *see also DIRECTV Waiver*, Narrative at 3-5 (seeking a waiver to operate a domestic service with fixed earth stations in the 11.45-11.7 GHz band along with its proposed U.S. gateway earth stations in the 12.75-13.25 GHz band).

For all of the foregoing reasons and only to the extent necessary to grant this Modification Petition, the Commission should waive Footnote NG52 to permit operation of a limited number of U.S. gateways supporting ESIMs as described herein. Grant of the requested waiver would not undermine the underlying policy of Footnote NG52, would be consistent with applicable Commission policy and precedent, and would serve the public interest as described herein.

III. CONCLUSION

Eutelsat seeks authority for the EUTELSAT 139 West A satellite to serve the U.S. market and U.S.-licensed ESIMs with additional Ku-band frequencies and coverage at the nominal 139° W.L. orbital location. Authorizing EUTELSAT 139 West A to provide expanded service to U.S. customers – including communications with a limited number of gateway earth stations in the United States in bands subject to Footnote NG52 and with ESIMs in a larger Pacific Ocean coverage area – will serve the public interest by enhancing competition in the United States, making efficient use of in-orbit satellite assets, and better meeting U.S. demand for satellite mobility and other FSS services. Accordingly, Eutelsat respectfully requests that the Commission modify the *E139WA Grant* as proposed herein.

Attachment A

FCC Form 312, Response to Questions 34 and 40:
Foreign Ownership, Officers, Directors, and Ten Percent or Greater Shareholders of Eutelsat S.A.

Eutelsat S.A. is a *société anonyme* organized under the laws of France and incorporated under number 422 551 176 RCS Paris. The address of Eutelsat S.A. is 32 Boulevard Gallieni, 92130 Issy les Moulineaux, France. An organizational chart showing the ownership of Eutelsat S.A. is attached.

96.38% of Eutelsat S.A.'s share capital is held by Eutelsat Communications S.A., the publicly traded parent of Eutelsat S.A. In addition, the Russian Satellite Communications Company ("RSCC") holds 3.38% of the shares issued by Eutelsat S.A. and 0.24% of the shares of Eutelsat S.A. are held by other non-Eutelsat entities as set out on the ownership chart attached hereto. RSCC and these other entities have no control over Eutelsat S.A. All shareholdings of Eutelsat S.A. (other than the 0.04% of such shares held by Eutelsat S.A.'s employees and executives) are a result of the privatization of Eutelsat S.A., formerly an intergovernmental organization.

19.98% of the share capital of Eutelsat Communications S.A. is held by Bpifrance Participations (formerly named Fonds Stratégique d'Investissement), a *société anonyme* formed in 2008 to enhance equity in France and help stabilize French companies during the economic crisis. Approximately 50% of Bpifrance Participations' share capital is held by the Caisse des Dépôts et Consignations (the "CDC") and approximately 50% of its share capital is held by the French State. Bpifrance Participations must present its strategic plans and annual report to the supervisory commission of the CDC. The Bpifrance Participations' board of directors has nine members. Three of the directors are representatives of the CDC, three of the directors are representatives of the French State and two of the directors are independent directors. The chief executive officer of Bpifrance Participations is appointed by its board of directors. The address of Bpifrance Participations is 27-31, avenue du Général Leclerc, 94710 Maisons-Alfort, Cedex, France.

The CDC is a financial institution wholly owned by the French State and under the supervision of the French Parliament that serves the general interest and the economic development of France. CDC has a mission of long-term investment. Approximately 50% of the CDC's recurring and non-recurring net profit is paid to the French State. The CDC is managed by a chief executive officer, who is appointed by the President of the French State. The CDC is supervised by a supervisory commission of thirteen members, all of which are appointed by various sectors of the French government.

7.58% of the share capital of Eutelsat Communications is held by Fonds Stratégique de Participation (FSP). Backed by six major French insurance companies (BNP PARIBAS CARDIF, CNP ASSURANCES, CREDIT AGRICOLE ASSURANCES, SOGECAP (SOCIETE GENERALE group), GROUPAMA and NATIXIS ASSURANCES), the FSP is a long-term equity investor in French companies. Through FSP, insurance companies and key institutional investors with long-term liabilities channel some of France's long-term savings into equity investments.

5.99% of the share capital of Eutelsat Communications S.A. is held by China Investment Corp. ("CIC") through Flourish Investment Corporation and Fullbloom Investment Corporation, all organized under the laws of the People's Republic of China. Information about CIC can be found on its website: www.china-inv.cn.

To the best of Eutelsat Communications S.A.'s knowledge, no other shareholders own, directly or indirectly, more than 10% of its share capital or voting rights. Eutelsat Communications S.A. is managed by a board of directors that currently has ten members, each of whom has a four-year renewable term of office. Currently, seven of the directors are independent, two are affiliated with the Bpifrance Participations. No decisions of the board of directors can be taken or be blocked by two directors. Neither the Bpifrance Participations, nor any of the CIC Entities or FSP, nor any foreign

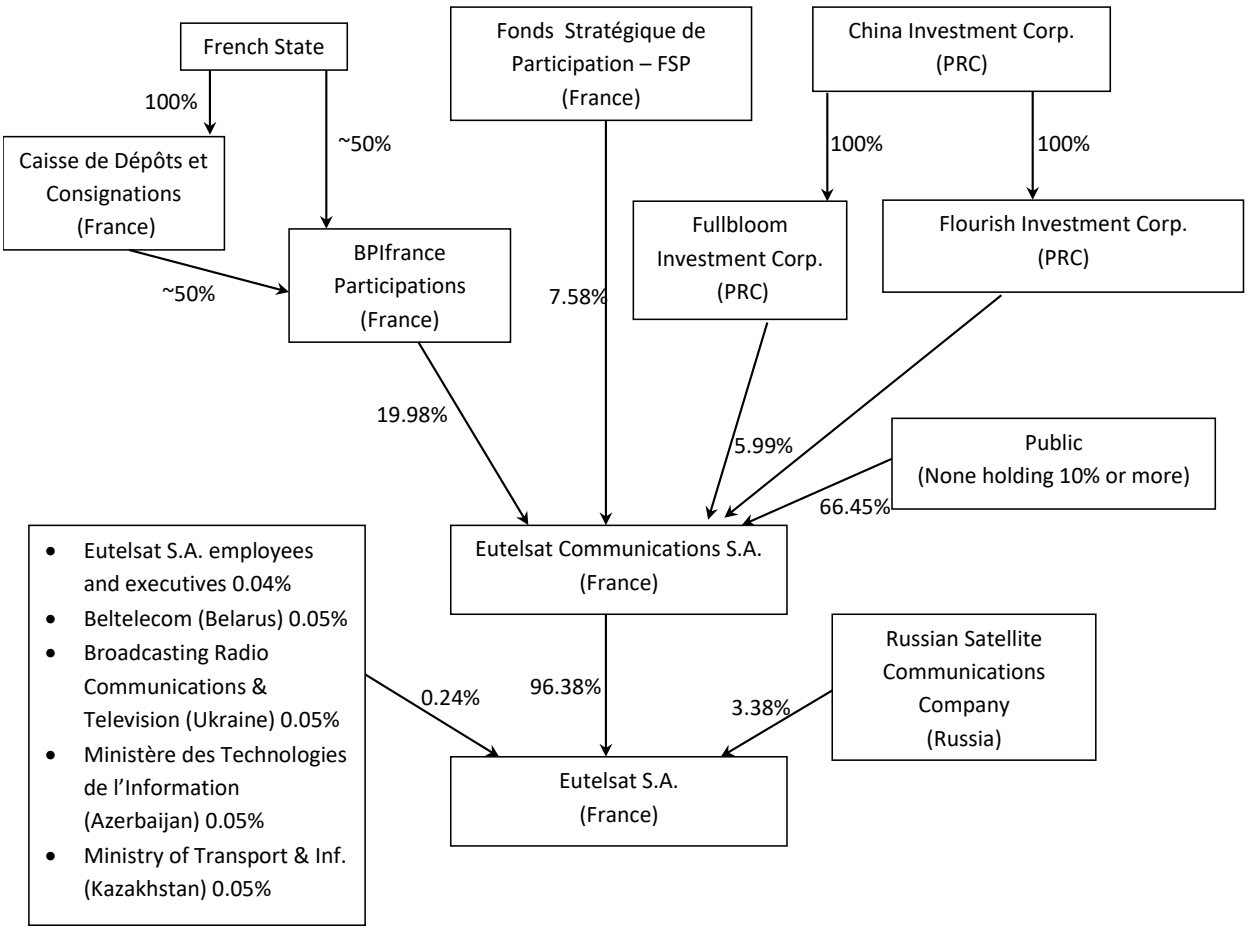
government or person controlled by or acting on behalf of a foreign government has or will have the right or power to appoint any of Eutelsat Communications S.A.'s principal officers. None of the CIC Entities or FSP has the right or power to appoint any of Eutelsat Communications S.A.'s directors.

More information about Eutelsat Communications S.A., its shareholders, and its governance can be found on its website at www.eutelsat.com.

Principal officers of Eutelsat Communications S.A. include:

Rodolphe Belmer, CEO
Michel Azibert, Deputy CEO

The individuals listed above can be contacted c/o Eutelsat S.A., 32 boulevard Gallieni, 92130 Issy les Moulineaux, France. Mr. Belmer and Mr. Azibert are citizens of the Republic of France.



Attachment B – Regulatory Compliance Matrix

Reference Section	Reference Location	Topic / Reason for (n/a)
25.114(a)(1)	FCC Form 312; Schedule S; Narrative; Attachment C	Overall description of filing
25.114(a)(2)	n/a	NGSO constellation
25.114(a)(3)	n/a	Application filed pursuant to two-step procedure
25.114(b)	Form 312	Waiver required by 47 U.S.C §304
25.114(c)(1)	FCC Form 312; Schedule-S	Applicant information
25.114(c)(2)	Schedule-S	Applicant points of contact
25.114(c)(3)	FCC Form 312; Narrative; Schedule-S	Type of authorization
25.114(c)(4)(i)	Attachment C – Section 6; Schedule-S	Channel frequency, bandwidth and polarization
25.114(c)(4)(ii)	Schedule-S	Maximum EIRP and EIRP density of TX beams
25.114(c)(4)(v)	Schedule-S	RX beam: G/T, SFD
25.114(c)(4)(vi)(A)	Schedule-S	GSO: Antenna Gain Contours
25.114(c)(4)(vi)(B)	n/a	NGSO: Antenna Gain Contours
25.114(c)(4)(vi)(C)	n/a	Shapeable Beams: Antenna Gain Contours
25.114(c)(4)(vi)(D)	n/a	Steerable, non-shapeable beams
25.114(c)(4)(vii)(A-C)	n/a	GSO: Large number of spot beams
25.114(c)(5)(i-v)	Schedule-S	GSO: Orbital parameters
25.114(c)(6)(i-ix)	n/a	NGSO: Orbital parameters
25.114(c)(7)	Schedule-S; Attachment C – Sections 3, 6, and Exh. 1; Narrative	Frequency Bands, Types of Service and Coverage Areas
25.114(c)(8)	Schedule-S, See §25.208	TX Beams: PFD
25.114(c)(10)	Schedule-S; Narrative	Operational Lifetime
25.114(c)(11)	FCC Form 312	Common Carrier Status
25.114(c)(13)	n/a	17/24 GHz BSS polarization isolation
25.114(d)(1)	Narrative; Attachment C - Section 2	Overall description
25.114(d)(6)	Narrative	Public Interest
25.114(d)(7)	See §25.140(a)	Interference Analysis
25.114(d)(8)	n/a	L-Band MSS
25.114(d)(9)	n/a	MSS: Multiple Satellites
25.114(d)(10)	n/a	L/S-Band MSS
25.114(d)(11)	n/a	DBS
25.114(d)(12)	n/a	NGSO FSS
25.114(d)(13)(i-ii)	n/a	DBSS
25.114(d)(14)(i-v)	Narrative	Space Debris Mitigation Plan
25.114(d)(15)(i-v)	n/a	17/24 GHZ BSS
25.114(d)(16)	n/a	17/24 GHZ BSS
25.114(d)(17)	n/a	17/24 GHZ BSS
25.114(d)(18)	n/a	17/24 GHZ BSS

Reference Section	Reference Location	Topic / Reason for (n/a)
25.137(a)	Narrative	Requirements for U.S. market access request
25.137(b)	FCC Form 312, Schedule S, Attachment C, Narrative	Legal and technical information required for U.S. market access
25.137(c)	Narrative (see § 25.158)	Petition processing; queue placement
25.137(d)	Narrative	Non-U.S.-licensed satellite requirements
25.137(e-g)	n/a	Changes/modifications
25.140(a)(3)(i)	n/a	C-band limits
25.140(a)(3)(ii)	Attachment C - Section 13	Ku-band limits
25.140(a)(3)(iii)	n/a	Ka-band limits
25.140(a)(3)(iv)	n/a	24.75-25.25 GHz band
25.140(a)(3)(v)	Attachment C - Section 13	AP30B limits
25.140(a)(3)(vi)	n/a	2˚-spacing interference analysis
25.140(d)	n/a	Non-routine transmission levels
25.156(a)	Narrative	Petition consideration - general
25.158	Narrative	Petition consideration – GSO satellite
25.159	n/a	Unbuilt systems
25.172(a)(1-4)	Attachment C – Section 4	TT&C Reporting
25.202(e)	Attachment C - Section 7	Frequency Tolerance
25.202(f)(1-3)	Attachment C - Section 8	Out of band - emissions
25.202(g)	Attachment C – Section 4	TT&C on band edge
25.208(a-g)	Attachment C - Section 12	PFD Analysis
25.210(f)	Attachment C - Section 9	Full Frequency Reuse
25.210(j)	Narrative, Schedule S	EW Station keeping tolerance
25.283(a-c)	Narrative	Space Debris Mitigation Plan
25.207	Attachment C - Section 10	Cessation of Emissions

Attachment C – Engineering Statement

1. Scope

As required by Section 25.114 and other sections of the Part 25 rules, this Attachment contains additional information that cannot be entered into the Schedule S online submission system regarding the proposed relocation and operations of the EUTELSAT 139 West A satellite at the nominal 139° W.L. orbital location. In addition, in the interest of administrative convenience, this Attachment and associated Schedule S incorporate all new and previously provided information regarding EUTELSAT 139 West A to provide a comprehensive overview of the satellite's operational characteristics, as modified.

2. General Description (Section 25.114(d)(1))

The satellite is being relocated to 139.2° W.L. and is expected to reach its new orbital location in late February 2021. The EUTELSAT 139 West A satellite will provide fixed-satellite service ("FSS") and mobility services to aeronautical and maritime earth stations in motion ("ESIMs") in the United States and beyond from the nominal 139° W.L. orbital location.[1] It should be noted that the Schedule S rounds the new orbital location to 139 W.L. EUTELSAT 139 West A will begin operations at 139.2° W.L. with an inclination of 0.9° and the inclination will increase by approximately 0.9°/year.

EUTELSAT 139 West A will employ 56 Ku-band primary transponders using both linear polarizations, thereby providing dual-frequency reuse. The satellite will employ two regional fixed Ku-band uplink beams and three regional fixed Ku-band downlink beams. The fixed Ku-band beams will be configured to provide service to the contiguous United States ("CONUS") and neighboring regions, plus the South Pacific Ocean.

The EUTELSAT 139 West A satellite has other regional fixed uplink and downlink beams in Ka-band frequencies. However, they are not the subject of this filing.

The EUTELSAT 139 West A satellite is capable of conducting emergency TT&C operations in S-band. However, no U.S. market access is requested and therefore the S-band capabilities are not a part of this application.

3. Spacecraft Overview

EUTELSAT 139 West A was manufactured and supplied by EADS Astrium based on the Eurostar-3000 bus platform. The satellite is 3-axis stabilized and uses bi-propellant chemical propulsion for attitude, on-station control, repositioning and end-of-life deorbit.

The satellite will operate in Ku-band at the frequencies listed below, in addition to some specific frequencies for TT&C and ULPC functions:

[1] The satellite will actually operate at 139.2° W.L. to avoid overlap of its station-keeping box with that of the AMC-6 satellite located at 139.0° W.L. The Spaceway 2 satellite also operates at 138.9° W.L.

Ku-band Uplink	Ku-band Downlink
12.98 – 13.25 GHz	10.7 – 10.95 GHz
13.75 – 14.0 GHz	10.95 – 11.2 GHz
14.0 – 14.5 GHz	11.2 – 11.45 GHz
	11.45 – 11.7 GHz
	12.5 – 12.75 GHz

EUTELSAT 139 West A provides the following coverage (illustrations of the beam coverage areas are provided in Exhibit 1):

Ku-band Uplink	CONUS A	CONUS, parts of Canada, Mexico, and portions of the north Pacific Ocean
	PACIFIC SOUTH	South Pacific Ocean and portions of the west coast of South America
Ku-band Downlink	CONUS A	CONUS, parts of Canada, Mexico, and portions of the north Pacific Ocean
	CONUS B	CONUS, parts of Canada, Mexico, and portions of the north Pacific Ocean
	PACIFIC SOUTH	South Pacific Ocean and portions of the west coast of South America

The technical information in this Petition includes beam characteristics as EUTELSAT 139 West A is currently planned to be oriented upon arrival at its proposed location. To the extent the beams are reoriented, Eutelsat will conform to all Commission operating requirements in the new orientation, including permissible transmit and receive power levels. Thus, the spectrum compatibility demonstration set forth in this application would be valid and applicable to any satellite orientation adjustments that Eutelsat might make in response to customer requirements.

4. Telemetry, Tracking and Control (TT&C)

As required by 25.172(a), this section describes how TT&C operations will be conducted for the EUTELSAT 139 West A satellite.

The TT&C sub-system provides for communications during on-station operations, as well as during spacecraft emergencies. Ku-band telecommand transmissions are normally received and Ku-band telemetry communications are normally transmitted by the spacecraft through wide-beam uplink and

downlink horn antennas. During emergency operations, TT&C communications are transmitted and received through a near omni-directional S-band antenna.

TT&C communication channels have been selected at the edge of the assigned Ku-bands in accordance with Section 25.202(g). The satellite utilizes two Ku-band telemetry channels. The Ku-band telemetry channel center frequencies are 11699.8 MHz and 11700.4 MHz with a bandwidth of 300 kHz and horizontal polarization. The satellite utilizes one Ku-band command channel. The Ku-band command channel center frequency is 13752.5 MHz with a bandwidth of 600 kHz and employs horizontal polarization. TT&C nominal operations will be conducted from earth station facilities located in Mexico.

The coverage patterns of the Ku-band uplink and downlink TT&C beams (TCH & TMH) have been included as GXT files with a GIMS container database in the Schedule S.

Contact details for the control stations are provided below:

EUTELSAT 139 West A TT&C station 1:

Hermosillo
Carretera Bahía Kino, Km. 5.5
Col. El Llano
CP 83210
Hermosillo, Sonora
Mexico

EUTELSAT 139 West A TT&C station 2:

Iztapalapa
Av. de las Telecomunicaciones s/n
Col. Leyes de Reforma
CP 09310
Mexico, D.F.
Mexico

Satellite control center addresses and telephone numbers:

EUTELSAT 139 West A Control Center

Address: Eutelsat
32 Boulevard Gallieni
92130 Issy les Moulineaux
France

EUTELSAT 139 West A control contact info:

Email: csc@eutelsat.com
24/7 hours number(s): +33 1 45 57 06 66

5. Uplink Power Control

EUTELSAT 139 West A utilizes four Ku-band ULPC channels in three beacon beams. The Ku-band ULPC channel center frequencies are 11200.0 and 12500.0 MHz and have bandwidths of 100 kHz and employ horizontal polarization. In additional, the telemetry channels 11699.8 and 11700.4 MHz also operate as

ULPC channels via the TT&C downlink beam with bandwidths of 300 kHz and also employ horizontal polarization. The coverage patterns of the Ku-band ULPC beacon beams have been included as GXT files with a GIMS container database in the Schedule S.

6. Frequency Plan

The following tables list the uplink and downlink Ku-band channel plan for EUTELSAT 139 West A. This information is also provided in the accompanying Schedule S but is included here for clarity.

Table 1 Ku-Band Uplink Frequency Plan

Channel ID	Bandwidth (kHz)	Center Frequency (MHz)	Polarization
B1	72000	14291.67	V
B2	72000	14291.67	H
B3	72000	14375	V
B4	72000	14375	H
B5	72000	14458.33	V
B6	72000	14458.33	H
C01	36000	13001.00	V
C02	36000	13021.75	H
C03	36000	13042.50	V
C04	36000	13063.25	H
C05	36000	13084.00	V
C06	36000	13104.75	H
C07	36000	13125.50	V
C08	36000	13146.25	H
C09	36000	13167.00	V
C10	36000	13187.75	H
C11	36000	13208.50	V
C12	36000	13229.25	H
D1	36000	13771.41	V
D2	36000	13792.16	H
D3	36000	13812.91	V
D4	36000	13833.66	H
D5	36000	13854.41	V
D6	36000	13875.16	H
D7	36000	13895.91	V
D8	36000	13916.66	H
D9	36000	13937.41	V
D10	49500	13967.75	H
D11	36000	13978.91	V

F1	72000	14041.67	V
F2	72000	14041.67	H
F3	72000	14125	V
F4	72000	14125	H
F5	72000	14208.33	V
F6	72000	14208.33	H
G01	72000	14291.67	V
G02	72000	14375.00	V
G03	72000	14458.33	V
J01	108000	14062	V
J02	108000	14187	V
TC1	600	13752.5	H

Table 2 Ku-Band Downlink Frequency Plan

Channel ID	Bandwidth (kHz)	Center Frequency (MHz)	Polarization
A01	36000	10720.75	H
A02	36000	10720.75	V
A03	36000	10762.25	H
A04	36000	10762.25	V
A05	36000	10803.75	H
A06	36000	10803.75	V
A07	36000	10845.25	H
A08	36000	10845.25	V
A09	36000	10886.75	H
A10	36000	10886.75	V
A11	36000	10928.25	H
A12	36000	10928.25	V
B1	72000	10991.67	H
B2	72000	10991.67	V
B3	72000	11075	H
B4	72000	11075	V
B5	72000	11158.33	H
B6	72000	11158.33	V
C01	36000	11220.75	H
C02	36000	11241.50	V
C03	36000	11262.25	H
C04	36000	11283.00	V

C05	36000	11303.75	H
C06	36000	11324.50	V
C07	36000	11345.25	H
C08	36000	11366.00	V
C09	36000	11386.75	H
C10	36000	11407.50	V
C11	36000	11428.25	H
C12	36000	11449.00	V
D1	36000	11471.41	H
D2	36000	11492.16	V
D3	36000	11512.91	H
D4	36000	11533.66	V
D5	36000	11554.41	H
D6	36000	11575.16	V
D7	36000	11595.91	H
D8	36000	11616.66	V
D9	36000	11637.41	H
D10	49500	11667.75	V
D11	36000	11678.91	H
F1	72000	12541.67	H
F2	72000	12541.67	V
F3	72000	12625	H
F4	72000	12625	V
F5	72000	12708.33	H
F6	72000	12708.33	V
G01	72000	10991.67	H
G02	72000	11075.00	H
G03	72000	11158.33	H
H01	36000	12520.75	H
H02	36000	12562.25	H
H03	36000	12603.75	H
H04	36000	12645.25	H
H05	36000	12686.75	H
H06	36000	12728.25	H
TM1	300	11699.8	H
TM2	300	11700.4	H
BC2	100	12500	H
BC3	100	11200	H

7. Frequency Tolerance

Section 25.202(e) requires that the carrier frequency of each space station transmitter be maintained within 0.002% of the reference frequency. These frequency tolerance requirements will be met.

8. Out of Band Emissions

The out-of-band emission limits of Section 25.202(f)(1), (2) and (3) will be met.

9. Frequency Reuse

EUTELSAT 139 West A employs full frequency reuse on the Ku-band uplink and downlink by employing dual orthogonal linear polarization and frequency reuse across multiple regional beams.

10. Cessation of Emissions

As required by Section 25.207 of the FCC's rules, all downlink transmissions can be turned on and off by ground telecommand, thereby causing cessation of emissions from the satellite.

11. ITU Filings

The EUTELSAT 139 West A satellite will operate in Ku-bands (10.95-11.2, 11.45-11.7, 12.5-12.75 and 13.75-14.5 GHz) at the 139.2° W.L. orbital location under the F-SAT-N4-139W and F-SAT-N6-139W ITU satellite network filings.[2] The satellite will operate in the AP30B Ku-band (10.7-10.95, 11.2-11.45, and 12.98-13.25 GHz) at the 139.2° W.L. orbital location under the F-SAT-30B-139W ITU satellite network filing. The operation of the satellite will fall within the envelope of the parameters disclosed in these ITU satellite network filings.

12. PFD Analysis

The power flux density ("PFD") limits for space stations operating in the 10950–11200 MHz and 11450–11700 MHz bands are specified in Section 25.208 of the Commission's rules. The Commission's rules do not specify a PFD limit for FSS in the 10700-10950 MHz, 11200-11450MHz, and 12500-127500 MHz bands. However, the PFD limits specified by ITU No. 21.16 for Regions 1 and 3 are considered applicable to EUTELSAT 139 West A in Region 2 as well.

The maximum PFD levels for the EUTELSAT 139 West A transmissions were calculated for the bands 10700-10950 MHz, 10950–11200 MHz, 11200-11450 MHz, 11450–11700 MHz, and 12500-12750 MHz.[3] The results, provided in Schedule S, show that the downlink PFD levels of EUTELSAT 139 West A's carriers do not exceed the limits specified in either Section 25.208 of the Commission's rules or in the ITU Radio Regulations.

Should the EUTELSAT 139 West A satellite be reoriented, the orientation of the beams and/or the

[2] As detailed in the Schedule S, the frequency range 11.7-11.701 GHz covers a telemetry downlink and the frequency range from 12.499-12.501 GHz covers a beacon downlink channel.
[3] PFD compliance of beacon and telemetry carriers overlapping the service band edges is also demonstrated.

downlink power density will be adjusted to ensure the downlink PFD will still be compliant with applicable PFD limits.

13. Interference Analysis

In this section, the information specified in Section 25.140(a) is presented (as required by Section 25.114(d)(7)).

The downlink EIRP density of EUTELSAT 139 West A transmissions in the conventional or extended Ku-bands will not exceed levels provided in Section 25.140(a)(3)(ii). Associated uplink transmissions will not exceed applicable EIRP density envelopes in Sections 25.218, 25.222(a)(1), 25.226(a)(1), or 25.227(a)(1) of the Commission's rules unless the non-routine uplink and/or downlink operation is coordinated with operators of authorized co-frequency space stations at assigned locations within six degrees of the satellite.

CIEL-2 is the closest BSS satellite to EUTELSAT 139 West A operating at 128.85° W.L. This results in a nominal spacing separation of 10.35° which exceeds the 9° spacing criteria for BSS satellites.

Per Section 25.140 (a)(3)(v), EUTELSAT 139 West A operations in the 10700-10950 MHz, 11200-11450 MHz and 12980-13250 MHz bands will take into account the applicable requirements of Appendix 30B of the ITU's Radio Regulations. Further, compatibility with other U.S. ITU filings under Appendix 30B is assured since there are no other U.S. ITU Filings under Appendix 30B within at least 14° of 139.0°W.L.

14. Schedule S Exceptions

One of the downlink channels, C12, is 36 MHz wide with a carrier frequency of 11499.0 MHz. As a result, this channel straddles both the 11.2-11.45 MHz AP30B band and the 11.45-11.7 MHz FSS Ku-band. To address this issue in the Schedule S, we added an additional Operating Frequency Band from 11.43-11.47 GHz and an additional downlink beam, F2V6, to cover the Operating Frequency Band.

CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING ENGINEERING INFORMATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this application, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this application, and that it is complete and accurate to the best of my knowledge and belief.

/s/

_____

David C Morse, Ph.D.
Avaliant, LLC
Bellevue, WA USA
(425) 246-3080

Exhibit 1: Service Areas

This document illustrates the service areas for the uplink and downlink beams of EUTELSAT 139 West A at 139.2° W.L. in the accompanying Schedule S.

The Ku-band CONUS-A fixed uplink service area includes much of CONUS, Canada, Mexico, and portions of the north Pacific Ocean and is illustrated in Figure 1. Figure 1 reflects the service area for uplink beams F1H1, F1H2, F1H3, F1V1, F1V2 and F1V3.

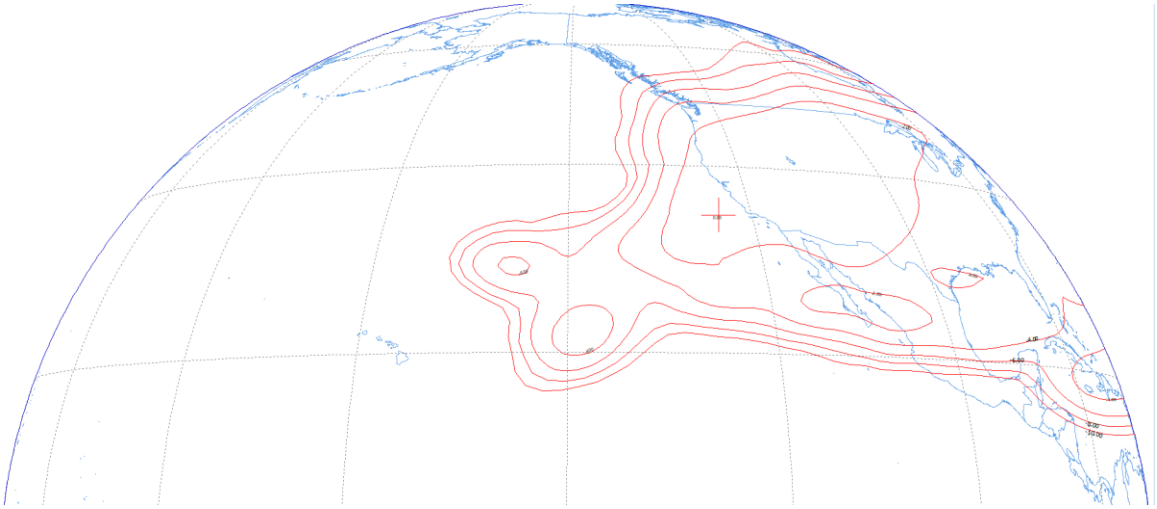


Figure 1 Ku-band CONUS-A Fixed Uplink Service Area from 139.2° W.L.

The Ku-band PACIFIC SOUTH fixed uplink service area includes much of the south Pacific Ocean and the west coast of South American and is illustrated in Figure 2. Figure 2 reflects the service area for downlink beam F4V2.

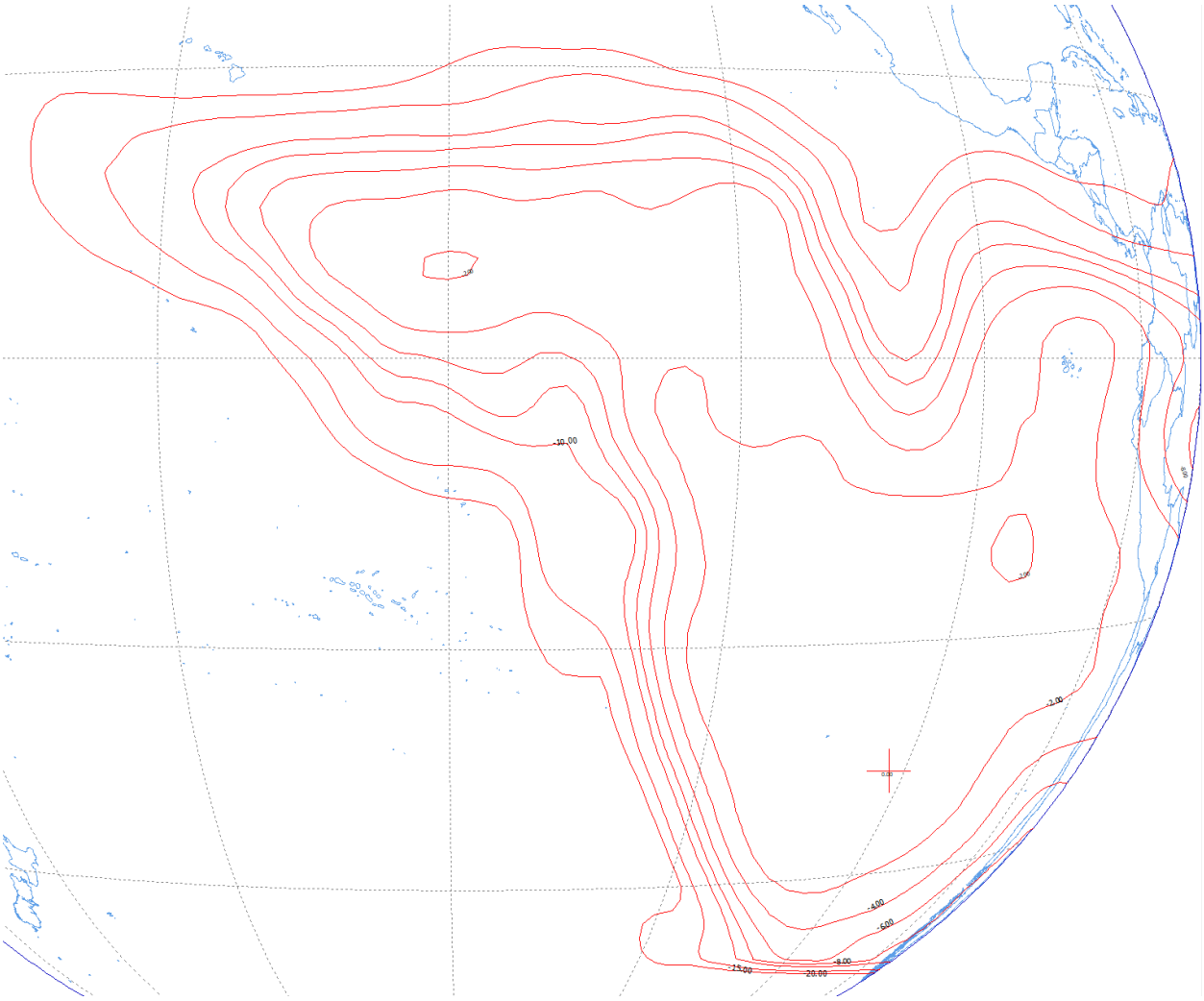


Figure 2 Ku-band PACIFIC SOUTH Fixed Uplink Service Area from 139.2° W.L.

The Ku-band CONUS-A fixed downlink service area includes much of CONUS, Canada, Mexico, and portions of the north Pacific Ocean and is illustrated in Figure 3. Figure 3 reflects the service area for uplink beams F2H1, F2H2, F2H3, F2H5, F2V1, F2V2, F2V3, F2V5 and F2V6.

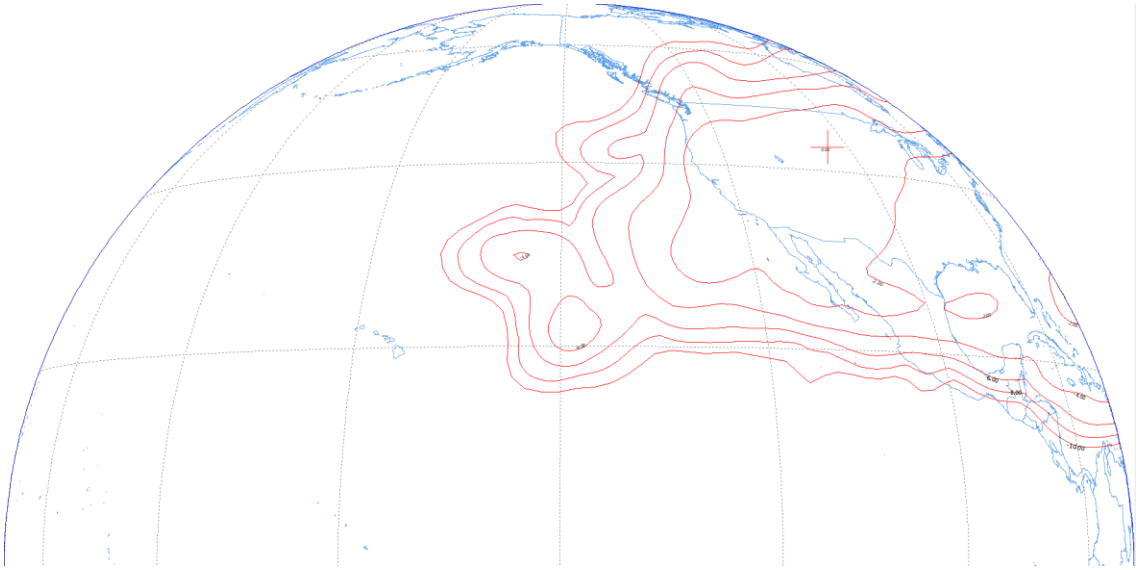


Figure 3 Ku-band CONUS-A Fixed Downlink Service Area from 139.2° W.L.

The Ku-band CONUS-B fixed downlink service area includes much of CONUS, Canada, Mexico, and portions of the north Pacific Ocean and is illustrated in Figure 4. Figure 4 reflects the service area for downlink beams F3H2, F3H4, F3V2 and F3V4.

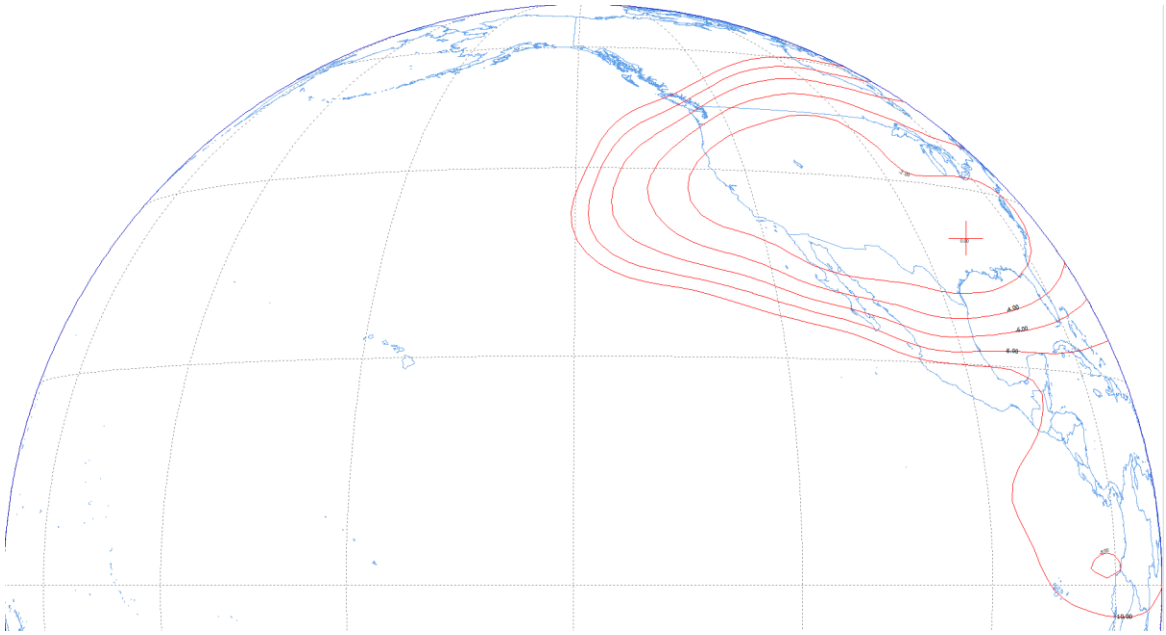


Figure 4 Ku-band CONUS-B Fixed Downlink Service Area from 139.2° W.L.

The Ku-band PACIFIC SOUTH fixed downlink service area includes much of the south Pacific Ocean and the west coast of South American and is illustrated in Figure 5. Figure 5 reflects the service area for downlink beams F5H1 and F5H3.

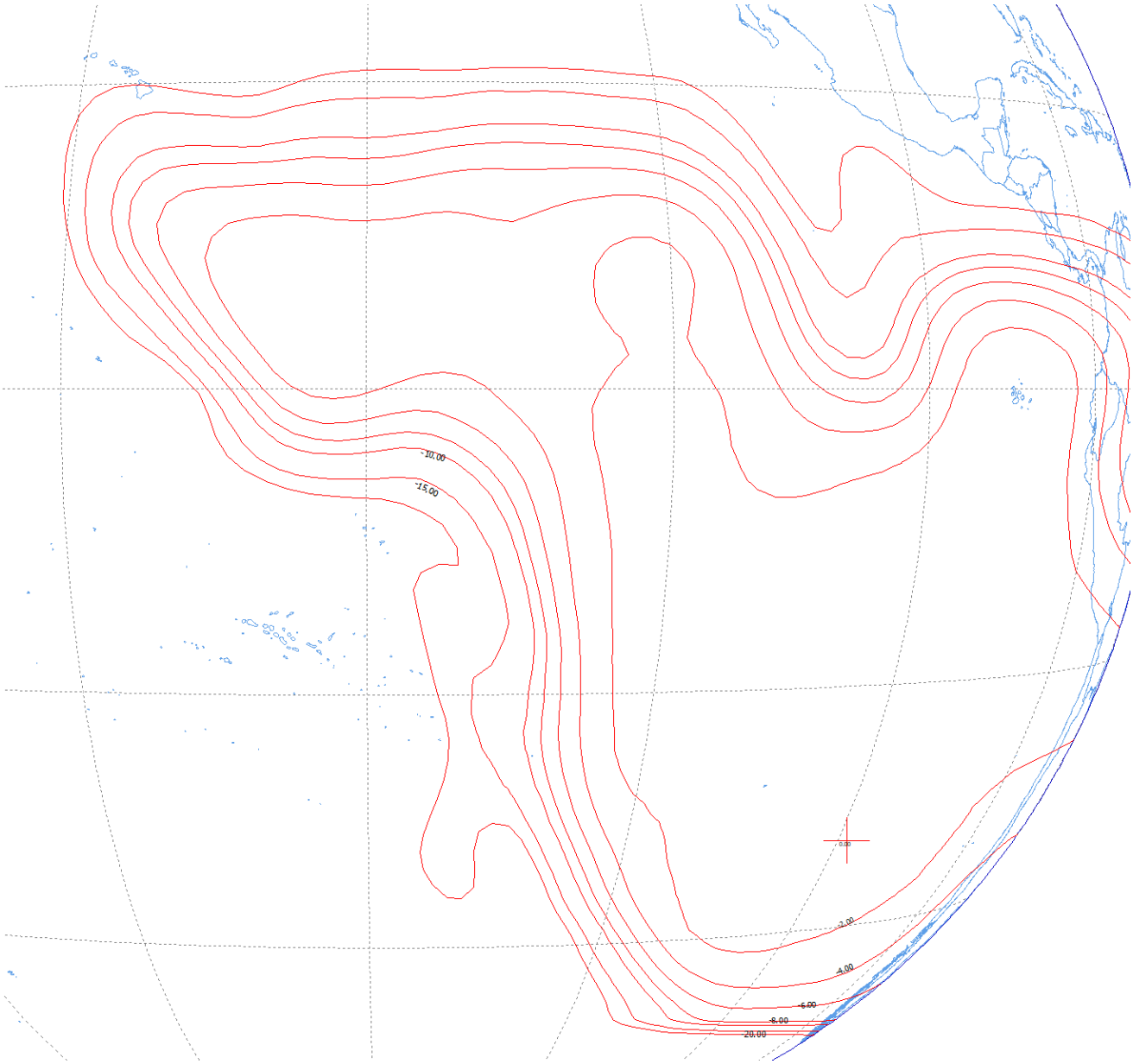


Figure 5 Ku-band PACIFIC SOUTH Fixed Downlink Service Area from 139.2° W.L.

The Ku-band regional beacon service area includes North America, Central America and the North Pacific and is illustrated in Figure 6. Figure 6 reflects the service area for downlink beams BH1 and BH2.

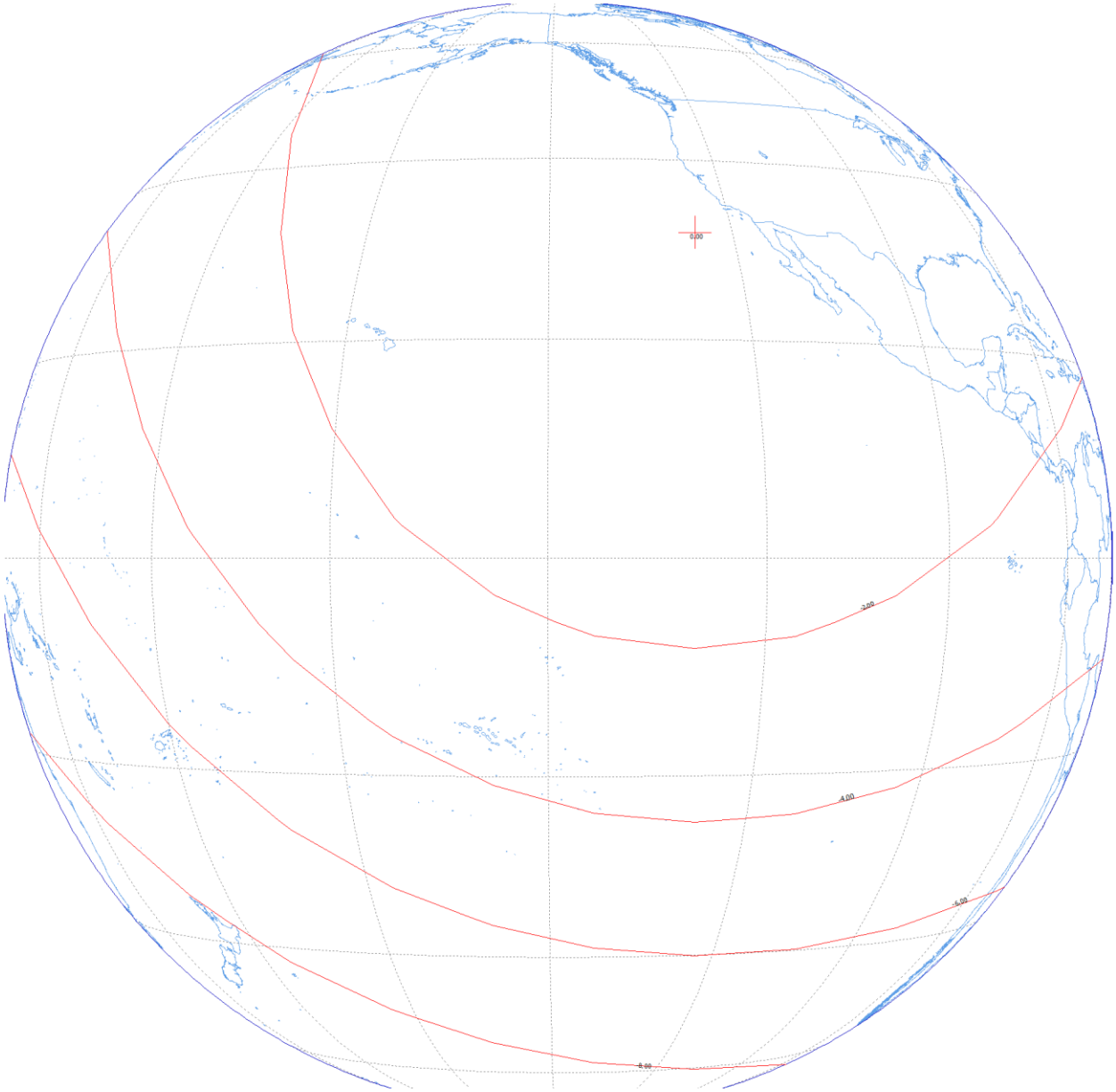


Figure 6 Ku-band Regional Service Area from 139.2° W.L.