

Agenda Date: May 20, 2021
Item Number: A7

Docket: UT-210059
Company Name: Starlink Services, LLC

Staff: Sean Bennett, Regulatory Analyst
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Recommendation

Enter an order granting Starlink Services, LLC's amended petition for designation as an Eligible Telecommunications Carrier (ETC) for the federal Rural Digital Opportunity Fund (RDOF) Phase I program.

Background

In early 2020, the Federal Communications Commission (FCC) created the Rural Digital Opportunity Fund program, which will commit up to \$20.4 billion over the next decade to support the deployment of voice and high-speed broadband services to unserved areas across the country.¹ The FCC plans to award support in two phases: Phase I will target those areas that are wholly unserved by broadband service (speeds less than 25/3 Mbps), as determined by the FCC; Phase II will target unserved locations within areas where FCC data demonstrates only partially served census blocks, as well as those areas that did not receive a winning bid in the Phase I auction.

The RDOF Phase I reverse auction concluded November 25, 2020, with 180 winning bidders who provisionally won \$9.2 billion in support to deploy broadband to over 5.2 million unserved homes and businesses.² In order to become eligible to receive RDOF support during the ten-year term of this program, each winning bidder must receive ETC designation by June 7, 2021. Before the FCC authorizes support, it will review a carrier's long-form application (FCC Form 683), confirm the carrier has been designated an ETC in all of the census blocks "won" in the auction, and review the carrier's letter of credit.

¹ *Rural Digital Opportunity Fund; Connect America Fund*, WC Docket Nos. 19-126, 10-90, [Report and Order](#), 35 FCC Rcd 686, ¶ 2 (released Feb. 7, 2020) (*RDOF Order*), *clarified on reconsideration by Rural Digital Opportunity Fund Auction (Auction 904); Rural Digital Opportunity Fund; Connect America Fund*, AU Docket No. 20-34, WC Docket Nos. 19-126, 10-90, FCC 20-127, Order on Reconsideration (released Sept. 29, 2020).

² *See Rural Digital Opportunity Fund Phase I Auction (Auction 904) Closes, Winning Bidders Announced, FCC Form 683 Due January 29, 2021*, AU Docket No. 20-34, WC Docket Nos. 19-126, 10-90, Public Notice ([DA-20-1422A1](#)), 35 FCC Rcd 13888 (Dec. 7, 2020) (*Close of Auction 904 Public Notice*).

Starlink Services, LLC (Starlink or Company) is one of the nine winning bidders in Washington state. The Company has provisionally won \$8,037,911.99 in annual RDOF support to deploy and provide voice and broadband services to approximately 52,086 customer locations in Washington state.

These unserved locations are within 7,849 specific census blocks in all Washington state counties except Steven and Pend Oreille.

Starlink filed its ETC petition on January 4, 2021. Commission staff (Staff) reviewed the petition, issued informal data requests, and conducted discussions with the Company. The Company filed an amended petition on March 25, 2021, including its long-form application that addresses Starlink's substantive investment plan under the RDOF program.

Federal Requirements for ETC Designation

A carrier must be designated as an ETC to receive federal universal service support,³ including RDOF support.⁴ Under the federal regulatory framework, state commissions have primary responsibility for designating ETCs in their states.⁵

Federal law provides that an ETC must offer and advertise the services supported by federal universal service support throughout the designated service areas.⁶ An ETC can use federal universal service support only for the provision, maintenance, and upgrading of facilities and services for which the support is intended.⁷

The supported services that an ETC must offer and other requirements that an ETC must meet are set forth in federal rules.⁸ The services that the FCC has designated for support are voice telephony services,⁹ which include the following:

- Voice grade access to the public switched network or its functional equivalent;
- Minutes of use for local service at no additional charge to end users; and
- Access to the emergency services provided by local government or other public safety organizations, such as 911 and enhanced 911, to the extent the local government in an eligible carrier's service area has implemented 911 or enhanced 911 systems.¹⁰

³ [47 U.S.C. § 254\(e\)](#); [47 U.S.C. § 214\(e\)](#).

⁴ See *RDOF Order* at 92.

⁵ 47 U.S.C. § 214(e)(2).

⁶ 47 U.S.C. § 214(e)(1).

⁷ 47 U.S.C. § 254(e).

⁸ [47 C.F.R. Part 54](#) - Universal Service.

⁹ The FCC's "definition of the supported service, voice telephony service, is technologically neutral, allowing ETCs to provision voice service over many platforms." *RDOF Order* at ¶ 43.

¹⁰ 47 C.F.R. § 54.101(a). Note that "toll limitation services to qualifying low-income consumers as provided in subpart E of this part" is no longer deemed a supported service as of 2014 under the rationale that many carriers no longer distinguish between toll and non-toll calls in their pricing. See *Lifeline and Link Up Reform and Modernization; Lifeline and Link Up, Federal-State Joint Board on Universal*

Other relevant federal requirements for ETCs include the following:

- An ETC must make available Lifeline service (reduced charges) to qualifying low-income consumers (47 C.F.R. § 54.405(a)) and comply with the FCC’s Lifeline rules (47 C.F.R. § 54.101(d)).
- An ETC must offer the voice telephony services supported by federal universal service support mechanisms throughout the service area for which the designation is received, either using its own facilities or a combination of its own facilities¹¹ and resale of another carrier’s services (including the services offered by another eligible telecommunications carrier) (47 C.F.R. § 54.201(d)(1); *see* 47 U.S.C. § 214(e)(1)).
- An ETC must advertise the availability of its universal service offerings and charges for such offerings throughout the service area for which the designation is received using media of general distribution (47 U.S.C. § 214(e)(1); 47 C.F.R. § 54.201(d)(2)).

Furthermore, in order to be eligible for RDOF support, an ETC must meet the RDOF requirements set forth in the FCC’s Universal Service rules¹² as well as requirements described in the RDOF Order and related FCC orders. These requirements include—

- Standalone voice service at rates comparable to offerings in urban areas (RDOF Order at ¶ 42)
- Deployment obligations (47 C.F.R. § 54.802(c))
- Technical and financial fitness (47 C.F.R. § 54.804)
- Public interest obligations, including provision of broadband service (47 C.F.R. § 54.805)
- Reporting, performance testing, compliance, and recordkeeping obligations (47 C.F.R. § 54.806)

Service, Advancing Broadband Availability Through Digital Literacy Training, WC Docket No. 11-42, WC Docket No. 03-109, CC Docket No. 96-45, WC Docket No. 12-23, [Report and Order and FNPRM](#), 27 FCC Rcd 6656, ¶¶ 229–34 (released Feb. 6, 2012).

¹¹ The FCC considers an ETC’s facilities as its “own” if the ETC has exclusive right to use the facilities or when the service is provided by any affiliate within the holding company structure. An ETC satisfies its obligation to “offer” qualifying services by being legally responsible for dealing with customer problems, providing quality of service guarantees, and meeting universal service fund-related requirements. *See Rural Digital Opportunity Fund Phase I Auction Scheduled for October 29, 2020; Notice and Filing Requirements and Other Procedures for Auction 904*, AU Docket No. 20-34, WC Docket Nos. 19-126, 10-90, Public Notice ([FCC-20-77A1](#)), 35 FCC Rcd 6077, ¶¶ 138–39 (released June 11, 2020) (*Auction 904 Procedures Public Notice*).

¹² 47 C.F.R. Part 54, [Subpart J](#) (§§ 54.801–§§ 54.806).

Deployment Obligations

Recipients of RDOF support can determine their exact deployment schedules but must meet the following deployment milestones:¹³

- 40 percent of the required number of locations by the end of third full calendar year following funding authorization of support;
- An additional 20 percent in each subsequent year of support;
- 100 percent by the end of the sixth year of support; and
- 100 percent of updated location count by the end of the eighth year of support.¹⁴

Public Interest/Broadband Service Obligations

Recipients of RDOF support must offer broadband service with latency suitable for real-time applications, and with usage capacity and at rates comparable to offerings in urban areas.¹⁵

With respect to speed and latency, the RDOF rules require carriers to meet broadband performance standards in one of four tiers. In Washington state, companies bid in only two of those tiers, in either the “above baseline” or “gigabit” tier, described below:

- Above Baseline – This performance level requires two terabytes of monthly usage, broadband speeds of 100 Mbps down and 20 Mbps up, and latency less than or equal to 100 milliseconds.
- Gigabit – This performance level requires two terabytes of monthly usage, broadband speeds of 1,000 Mbps down and 500 Mbps up, and latency less than or equal to 100 milliseconds.¹⁶

¹³ Compliance with milestones will be determined on a state-level basis, meaning that a carrier will be in compliance for Washington, if it deploys to the required percentage of locations “across all of the awarded areas included in its winning bids” in Washington. *See RDOF Order* at 54. The RDOF recipient is subject to non-compliance measure if it fails or is unable to meet RDOF requirements or conditions:

An Auction 904 support recipient will be subject to non-compliance measures if it fails or is unable to meet the service milestones or other service requirements, or fails to fulfill any other term or condition of Rural Digital Opportunity Fund support. As described in the Rural Digital Opportunity Fund Order and the CAF Performance Measures Order, these measures will scale with the extent of noncompliance, and include additional reporting, withholding of support, support recovery, and drawing on the support recipient’s letter of credit if the support recipient cannot pay back the relevant support by the applicable deadline. A support recipient may also be subject to other sanctions for non-compliance with the terms and conditions of Rural Digital Opportunity Fund support, including, but not limited to, the Commission’s existing enforcement procedures and penalties, reductions in support amounts, potential revocation of ETC designations, and suspension or debarment.

Close of Auction 904 Public Notice at ¶ 39 (citations omitted).

¹⁴ [47 C.F.R. § 802\(c\)](#); *RDOF Order* at ¶ 45.

¹⁵ [47 C.F.R. § 54.805\(a\)](#).

¹⁶ See [47 C.F.R. § 54.805\(b\)](#); *Auction 904 Procedures Public Notice* at ¶ 15, which outlines each performance tier broadband speed and latency requirements. In addition, the FCC released two orders

Both voice and broadband services must be priced reasonably and comparably to urban services. The 2021 reasonable comparability benchmarks were released at the end of 2020 and are \$54.75 for voice service, \$107.58 per month for broadband at speeds of 100/20 Mbps or \$133.52 per month for broadband at speeds of 1,000/500 Mbps, respectively.¹⁷ The FCC will set the 2022 benchmarks in late 2021.

UTC Requirements for ETC Designation

The Washington Utilities and Transportation Commission (Commission) has the authority to designate carriers as ETCs pursuant to the authority delegated to state commissions in Section 214 of the Telecommunications Act of 1996,¹⁸ and pursuant to RCW 80.36.610, which states, “The commission is authorized to take actions, conduct proceedings, and enter orders as permitted or contemplated for a state commission under the federal telecommunications act of 1996.”

A carrier seeking designation as an ETC must comply with the Commission’s ETC rules, which include the ETC standard, petition requirements, and compliance requirements. With respect to the Commission’s ETC standard, [WAC 480-123-040](#) states that “the commission will approve a petition for designation as an ETC if the petition meets the requirements of WAC 480-123-030, the designation will advance some or all of the purposes of the universal service found in 47 U.S.C. § 254, and the designation is in the public interest.”

The Commission’s ETC petition rule, [WAC 480-123-030](#), requires the following:

- (1) Petitions for designation as an ETC must contain:
 - (a) A description of the area or areas for which designation is sought.
 - (b) A statement that the carrier will offer the services supported by federal universal service support mechanisms throughout the area for which it seeks designation, either using its own facilities or a combination of its own facilities and resale of another carrier's services (including the services offered by another ETC);
 - (c) A description of how it will provide each supported service;

establishing speed and latency testing standards to maximize the impact of high-cost support to close the digital divide. See the 2018 CAF Performance Measures Order, [DA-18-710A1](#), and the 2019 Performance Measures Order on Reconsideration, [FCC-19-104A1](#).

¹⁷ *Wireline Competition Bureau and Office of Economics and Analytics Announce Results of 2021 Urban Rate Survey for Fixed Voice and Broadband Services, Posting of Survey Data and Explanatory Notes, and Required Minimum Usage Allowance for Eligible Telecommunications Carriers*, WC Docket No. 10-90, Public Notice ([DA-20-1409A1](#)) (released Nov. 30, 2020).

¹⁸ 47 U.S.C. § 214(e)(2).

(d) A substantive plan of the investments to be made with initial federal support during the first two years in which support is received and a substantive description of how those expenditures will benefit customers;

(e) A statement that the carrier will advertise the availability of services supported by federal universal service mechanisms, including advertisement of applicable telephone assistance programs, such as Lifeline, that is reasonably calculated to reach low-income consumers not receiving discounts;

(f) For wireless petitioners, a map in .shp format of proposed service areas (exchanges) with existing and planned locations of cell sites and shading to indicate where the carrier provides and plans to provide commercial mobile radio service signals.

(g) Information that demonstrates its ability to remain functional in emergency situations including a description of how it complies with WAC 480-120-411 or, for a wireless carrier, information that demonstrates that, when commercial power is not available, it has a reasonable amount of backup power (fixed, portable or other backup power source) for its cell sites, and backup power for its switches as prescribed in WAC 480-120-411(3) for LEC central offices; and cell sites do not include any small cell facility as defined in RCW 80.36.375 (2)(d) or any in building wireless installation; and

(h) Information that demonstrates that it will comply with the applicable consumer protection and service quality standards of chapter 480-120 WAC or, for a wireless carrier, a commitment to comply with the Cellular Telecommunications and Internet Association's (CTIA) Consumer Code for Wireless Service. Information regarding the version of the CTIA code adopted and where to obtain it is set forth in WAC 480-123-999.

(2) A company officer must submit the petition in the manner required by RCW 9A.72.085.

Discussion

Starlink is registered with the Commission to provide local exchange telecommunications services in Washington.¹⁹ Starlink is a Delaware limited liability company and is a wholly owned subsidiary of SpaceX. SpaceX designs, manufactures, and launches rockets, spacecraft, and satellites and now offers broadband service over the world's largest satellite constellation. In 2018, the FCC authorized SpaceX to deploy and operate Starlink, a constellation of more than 4,400 beam forming Non-Geostationary Orbit (NGSO) satellites in low Earth orbit (LEO).

SpaceX currently has approximately 1,434 satellites in orbit and continues to deploy additional satellites at a rate of approximately 60 per launch, which happens twice per month. The Starlink constellation will be operating at an altitude in the range of 540-570 kilometers, which converts

¹⁹ Starlink has provided a status report (as of April 30, 2021) on their ongoing ETC designation requests in other states. The following states have granted Starlink's ETC designation request: Colorado, Idaho, Kentucky, Maryland, New Jersey, South Carolina, and Wyoming.

to between 335 to 351 miles above earth.²⁰ In comparison, geostationary Orbit Satellites typically have an altitude around 22,236 miles above earth. The Starlink satellite constellation's close proximity to earth allowed the Company to bid in the low latency performance tier.

Starlink's amended petition includes the network diagram that is required by the FCC to be certified by a professional engineer as being capable of delivering at least 95% of the awarded locations in each state, and that its voice and broadband services meet the requisite performance requirements.²¹ Starlink services will rely on the extensive managerial and technical expertise of SpaceX in delivering service to consumers.

SpaceX is currently operating a beta program to offer broadband service in Washington, Montana, Minnesota, Oregon, Michigan, Idaho, Wisconsin, Maine, and North Dakota. Starlink states that this beta program has demonstrated the Starlink network can provide 100/20 Mbps to users and that 95 percent of network round-trip latency currently measures at or below 31 milliseconds.

Starlink has noted that customers of SpaceX's beta program may experience brief losses of connectivity, which the Company explains is related to ongoing improvements to its service. This loss of connectivity is addressed in SpaceX's FAQ document.²² In response to Staff inquiries, Starlink has stated that the issue of loss connectivity will not be experienced by customers of RDOF-supported services and that there will be no loss of connectivity in its RDOF locations.²³ With its ongoing deployment of satellites and associated terrestrial facilities, Starlink expects to continue to improve its performance and to expand services.²⁴

²⁰ The FCC recently approved a reduction in altitude for the Company's remaining 2,814 satellites from the 1,100-1,300 km range to the 540-570 km range. *In the Matter of Space Exploration Holdings, LLC, Request for Modification of the Authorization for the SpaceX NGSO Satellite System*, IBFS File No. SAT-MOD-20200417-00037, Call Signs S2983 and S3018, Order and Authorization and Order on Reconsideration ([FCC-21-48](#)), ¶ 1 (released April 27, 2021) (SpaceX Third Modification Order).

²¹ [47 C.F.R. § 54.804\(b\)\(2\)\(iv\)](#) requires an application for RDOF support to contain "[a] description of the technology and system design the applicant intends to use to deliver voice and broadband service, including a network diagram which must be certified by a professional engineer. The professional engineer must certify that the network is capable of delivering, to at least 95 percent of the required number of locations in each relevant state, voice and broadband service that meets the requisite performance requirements for Rural Digital Opportunity Fund support."

²² <https://www.starlink.com/faq> contains frequently asked questions and answers for SpaceX's beta program.

²³ Starlink's response to Informal Staff Data Request No. 28(b).

Q. Starlink Beta FAQs indicates that "There will also be brief periods of no connectivity at all... A. [. . .] These losses of connectivity are related to ongoing improvements to our service. As the Starlink constellation improves through additional satellite launches and improved technology, the user experience will also improve. SpaceX's beta program does not currently offer a voice product. RDOF locations will not experience this loss of connectivity because it is not our intent to offer the beta quality product to RDOF users. These losses of connectivity will be resolved when we introduce RDOF services to our customers. . . ."

²⁴ See Starlink's response to Informal Staff Data Request No. 20(b).

Starlink requested to be designated as an ETC throughout all of the awarded census blocks within the 37 counties where it will operate as a winning bidder.²⁵ In its petition, Starlink has committed to offer voice and broadband services throughout its designated service area.²⁶ Starlink will also make its Lifeline services available to low-income consumers and will advertise all supported services throughout its service area. As an ETC, Starlink must provide discounted services to qualifying low-income consumers.

The Company has stated that it will comply with the applicable consumer protection and service quality standards of the Commission in WAC 480-120. Further, the Company has demonstrated through its petition and discovery responses that it has the ability to remain operational in an emergency situation.²⁷

Starlink provided its initial plan of investments in its long-form application filed with the Commission on March 25, 2021. The planned investments will make it possible for the Company to begin deployment of supported services. The Company plans to meet the deployment milestones established for the RDOF program. That is, the Company will offer commercially at least one voice and one broadband service meeting the relevant service requirements to the number of locations in the timeframe required by the RDOF rules.

Based on its bid, Starlink must meet the Above Baseline performance tier standard. Starlink is committed to providing internet and voice services using SpaceX's LEO NGSO satellites using Ku- and Ka-band spectrum.²⁸ The Company will offer these services by using the Starlink

Q. Please describe how the company complies with WAC 480-120-411.

A. [. . .] the Starlink network has already successfully demonstrated it can surpass the FCC's "Above Baseline" and "Low Latency" performance tiers, including meeting and exceeding 100/20 megabits per second throughput to individual users, and demonstrating performance of 95% of network round-trip latency measurements at or below 31 milliseconds. . . .

²⁵ See the attachment to this memo for a map of the proposed service area.

²⁶ [47 C.F.R. § 54.805](#) specifies the RDOF public interest obligations of winning bidders. Based on its bid, Starlink must meet the Above Baseline performance tier standard.

²⁷ Starlink's response to Informal Staff Data Request No. 20(b).

Q. Please describe how the company complies with WAC 480-120-411.

A. [. . .] SpaceX will monitor its network 24x7x365 through its Network Operations Center located in Redmond, Washington, and the satellites will be monitored by "mission control centers" at SpaceX facilities across the country and remotely if necessary. At scale, each satellite should have three or more potential gateway sites in view at all times to ensure that all of the satellite's antennas are in use, and the system is fully redundant against a single gateway site going offline for any reason. SpaceX typically equips gateway sites with nine steerable antennas for diverse network redundancy. The system is designed to detect failure of any individual gateway antenna and remove it from service. Because end-users will be able to obtain service through multiple satellite and gateways, automatic traffic rerouting is essentially built into the system. . . .

²⁸ Ku-band utilizes approximately 12-18 GHz segment and Ka-band uses the 26.5-40GHz segment of the electromagnetic spectrum.

constellation of satellites, ground gateway sites, and consumer premise equipment.²⁹ Starlink claims that it will be able to offer broadband at speeds of 100 Mbps downstream and 20 Mbps upstream with latency of less than 100 milliseconds, as required by the Company's winning "Above Baseline" performance tier bid. The Company also plans to offer two terabytes of monthly usage. SpaceX is charging \$99 monthly for broadband service in its beta program. Although specific rates for services in RDOF locations are still being developed, Starlink commits to setting its rates for services at or below the FCC's reasonable comparability benchmark for voice and broadband services.

Public Comment

On May 7, 2021, Petrichor Broadband, LLC (Petrichor) filed comments in opposition to the application of StarLink to be designated as an ETC. Petrichor claims that the application does not meet the requirements of WAC 480-123-030 and WAC 480-123-040.³⁰

In Starlink's amended petition, which includes the Company's long-form application, Starlink has described and demonstrated how it will provide broadband and voice services throughout its ETC service area. The Company also explained how it will provide emergency services and remain operational during an emergency, through discovery responses as well as the petition and the long-form application. The Company provided a substantial investment plan with detailed information on technology and system design. Starlink states that the investment will be utilized to deploy the infrastructure necessary to provide broadband services to 52,086 unserved locations.³¹

Petrichor's argument that designating Starlink as an ETC is not in the public interest is flawed. Any carrier designated as an ETC for purposes of receiving RDOF support will be receiving federal funds that it must use to meet federal requirements. The requirements for RDOF recipients include service infrastructure requirements, speed and latency requirements, service milestones, reporting, performance testing and record retention requirements. There is no federal requirement for RDOF recipients to match state broadband goals.³² When the Commission considers the public interest, it is in the context of the FCC's RDOF program. The purpose of RDOF is to bring voice and broadband to consumers in unserved areas. Starlink, as a winning bidder, has a credible plan to deploy required services to these unserved areas. To date, Staff is not aware of any carrier who has a plan to offer broadband services to the 52,086 locations within these unserved areas.

²⁹ Starlink's response to Informal Staff Data Request No. 17. Starlink indicates that SpaceX charges a single upfront \$499 equipment fee in its beta program. Furthermore, Starlink is working to drive down its own costs related to CPE so that it can lower prices to its consumers. Starlink is considering other options such as financing, payment plans, or rent-to-own.

³⁰ WAC 480-123-040 states, "The commission will approve a petition for designation as an ETC if the petition meets the requirements of WAC 480-123-030, the designation will advance some or all of the purposes of universal service found in 47 U.S.C. § 254, and the designation is in the public interest.

³¹ Petition, Section (c)(iv) – Infrastructure includes satellites, user customer premise equipment, and gateway sites. Starlink will reserve capacity to serve residents of Washington in unserved areas.

³² [RCW 43.330.536](#) outlines the goals of the Washington State Broadband Office.

Conclusion and Recommendation

Commission staff has reviewed the amended petition and additional information provided by Starlink. The amended petition meets the requirements of the Commission's ETC petition rule, WAC 480-123-030, and is consistent with federal RDOF requirements. Designation of Starlink as an ETC will benefit Washingtonians by making voice and broadband available to 52,086 unserved locations in the state.

Based on its review and analysis, Staff concludes that Starlink has met the necessary requirements for designation as an ETC in the areas for which it seeks designation. Therefore, Staff recommends that the Commission enter an order granting Starlink's ETC petition, as amended through the Company's March 25, 2021, filing.

Attachment - Map