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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of Starlink Services, LLC for Designation as an Eligible Telecommunications Carrier for Purposes of Receiving Rural Digital Opportunities Fund Support	Docket No. 21-2624-01
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Direct Testimony of
Douglas Duncan Meredith
On behalf of
Utah Rural Telecom Association and its Members

1 **I. Witness Qualifications**

2 **Q: Please state your full name, place of employment and position.**

3 A: My full name is Douglas Duncan Meredith. I am employed by JSI, LLC (“JSI”) as
4 Director – Economics and Policy. JSI is a telecommunications consulting firm
5 headquartered in Greenbelt, Maryland. My office is located at 547 Oakview Lane,
6 Bountiful, Utah 84010. JSI is a full-service consulting firm, providing operational,
7 financial, management, regulatory, marketing, and strategic assistance to
8 independent community-based communications providers. JSI has provided
9 telecommunications consulting services to communications providers since 1963.

10 **Q: Please describe your professional experience and educational background.**

11 A: As the Director of Economics and Policy at JSI, I assist clients with the development
12 of policy pertaining to economics, pricing, and regulatory affairs. I have been
13 employed by JSI since 1995. Prior to my work at JSI, I was an independent research
14 economist in the District of Columbia and a graduate student at the University of
15 Maryland – College Park.

16 In my employment at JSI, I have participated in numerous proceedings for rural and
17 non-rural telephone companies. These activities include, but are not limited to, the
18 creation of forward-looking economic cost studies, the development of policy
19 related to the application of the rural safeguards for qualified local exchange
20 carriers, the determination of Eligible Telecommunications Carriers (“ETCs”), the
21 sustainability and application of universal service policy for telecommunications
22 carriers, as well as supporting incumbent local exchange carriers in arbitration
23 proceedings, rural exemption suspension and/or modification proceedings.

24 In addition to assisting telecommunications carrier clients, I have served as the
25 economic advisor for the Telecommunications Regulatory Board of Puerto Rico
26 since 1997. In this capacity, I provide economic and policy advice to the Board
27 Commissioners on telecommunications issues that have either a financial or
28 economic impact on carriers or end-users. I have participated in a number of
29 arbitration panels established by the Board to arbitrate interconnection issues under
30 Section 252 of the Telecommunications Act of 1996. Many of these arbitration
31 decisions have been appealed to and upheld by the U.S. Court of Appeals, First
32 Circuit.

33 I have participated in numerous national incumbent local exchange carrier and
34 telecommunications groups, including those headed by NTCA—The Rural
35 Broadband Association (including OPASTCO), USTelecom, and the Rural Policy
36 Research Institute. My participation in these groups focuses on the development of
37 policy recommendations for advancing telecommunications capabilities in rural
38 communities, universal service, and other policy matters.

39 I have a Bachelor of Arts degree in Economics from the University of Utah, and a
40 Master's degree in Economics from the University of Maryland – College Park.
41 While attending the University of Maryland – College Park, I was a Ph.D. candidate
42 in Economics, having completed all coursework, comprehensive and field
43 examinations for a Ph.D. in Economics.

44 **Q: Have you testified previously in federal and state regulatory proceedings on**
45 **telecommunications issues?**

46 **A:** Yes. I have testified live or in pre-filed regulatory testimony in various states
47 including Arizona, Colorado, Indiana, Maine, Michigan, Montana, North Dakota,
48 New Hampshire, New York, South Carolina, Tennessee, Texas, Utah, Vermont,

49 and Wisconsin. I have also participated in regulatory proceedings in many other
50 states that did not require formal testimony, including Oklahoma, Florida,
51 Louisiana, Mississippi, South Dakota, Puerto Rico, and Virginia. In addition to
52 participation in state regulatory proceedings, I have participated in federal
53 regulatory proceedings through filing of formal comments in various proceedings
54 and submission of an economic report in an enforcement proceeding.

55 **Q: What was the subject of the proceedings in which you have testified?**

56 A: The proceedings in which I have provided testimony or comments involve matters
57 related to incremental costs, interconnection agreements, reform of state universal
58 service policy, reform of state universal service contribution methodology,
59 including moving to a connection-based allocation, National Exchange Carrier
60 Association (“NECA”) tariffs, competitive ETC designation, rural exemption
61 challenges, designation of local traffic, infrastructure reliability, and competitive
62 market analysis.

63 **Q: On whose behalf are you testifying in this proceeding?**

64 A: I am testifying on behalf of the Utah Rural Telecom Association (“URTA”) and its
65 members.

66 **Q: Was this testimony and the identified exhibits prepared by you or under your
67 direct supervision?**

68 A: Yes.

69 **II. Introduction**

70 **Q: Please explain the interest URTA has in this proceeding.**

71 A: URTA members are currently Eligible Telecommunications Carriers (“ETCs”) as
72 this term is used in the Communications Act of 1934, as amended (“Act”). Starlink
73 Services, LLC (“Starlink”) is seeking ETC designation for its satellite internet
74 access and voice over Internet protocol (“VoIP”) service. Since this is a proceeding
75 of first impression for an ETC designation for Starlink’s 4,400 Non-Geostationary
76 Orbit (“NGSO”) satellites, URTA urges the Commission to consider a number of
77 novel and untested issues before granting the designation.

78 The Act delegates to the Utah Public Service Commission (“Commission”) the
79 authority to designate Starlink an ETC in the identified rural areas of Utah provided
80 the public interest is satisfied. It is not possible to make this determination given the
81 materials provided by Starlink in this proceeding. Without a full examination of the
82 capabilities of Starlink’s service and an exact description of the charges associated
83 with the service, I submit it would not be in the public interest to grant Starlink’s
84 Application for ETC Designation for Purposes of Receiving RDOF Funds (the
85 “Application”).

86 **Q: What Starlink materials have you reviewed in preparation for your testimony?**

87 A: I have reviewed the Starlink Application and the Pre-filed Direct Testimony of Matt
88 Johnson.

89 **Q: Is the Starlink material sufficiently detailed to address the capabilities of its**
90 **NGSO satellite configuration and the price of the service that will be offered to**
91 **Utah residents?**

92 A: No.

93 **Q: What information is missing from the Starlink material?**

94 A: There is insufficient technical detail covering the service and the material lacks the
95 prices that subscribers will be charged for the service.

96 **III. Technical Details**

97 **Q: Please identify the first technical detail missing from the Application and that**
98 **would be necessary to make a determination that Starlink's Application should**
99 **be granted.**

100 A: It is not clear from the materials that Starlink will be able to provide continuous
101 VoIP service, which includes the simultaneous ability to call emergency services,
102 for the more than 8,600 locations in the requested ETC areas in Utah. While there
103 are a planned 4,440 NGSO satellites in the worldwide configuration, how many
104 satellites will be able to provide service in Utah is not specified in the Starlink's
105 Application or Mr. Johnson's Testimony. The Starlink NGSO satellites are designed
106 to cover the entire earth. Earth has an area of 196,939,900 square miles. This means
107 each satellite must cover 44,356 square miles. (This does not account for
108 overlapping satellite footprints.) Utah has an area of 84,899 square miles. This
109 suggests that two satellites, perhaps three, may be able to serve the area of Utah at any
110 given moment. However, the Starlink materials are silent on how many
111 simultaneous end-user RF connections each satellite has using the Ku band. If
112 Starlink cannot provide 8,600 simultaneous connections to end-users upon full
113 deployment using the satellites covering Utah, then it seems the configuration is
114 insufficient to provide emergency voice services.

115 **Q: Are you suggesting that Starlink will not be able to provide simultaneous voice**
116 **service to the locations in the requested ETC area?**

117 A: We do not have sufficient information to make this determination. We do not know

118 if Starlink will provide end-user customers with uninterrupted 24x7 access to 911
119 emergency services. The capacity of the Starlink voice system is unknown at this
120 time. Without this information, the Commission should not make a determination
121 that Starlink's Application is in the public interest.

122 **Q: Do you have similar concerns about the information provided regarding**
123 **broadband service?**

124 A: Yes. Starlink is obligated to provide 100Mbps service to the more than 8,600
125 locations it was awarded in the Rural Development Opportunity Fund ("RDOF")
126 auction. There is no discussion in Mr. Johnson's Testimony about downlink
127 capacity—other than identifying the Ka bands to be used in Figure 1 of Mr.
128 Johnson's Testimony—but identification of the Ka bands to be used doesn't mean
129 Starlink will have sufficient middle mile capacity to deliver the obligated 100Mbps
130 to potentially more than 8,600 customer locations. More detail is needed on the
131 particulars of this service.

132 **Q: Does your concern also cover the last mile broadband capacity of the NGSO**
133 **satellite configuration?**

134 A: Yes. There is insufficient information in the Starlink materials to determine whether
135 customers will be receiving reliable broadband at the RDOF obligated speeds. One
136 fatal omission, for example, is that there is no discussion on how Starlink will
137 prioritize voice service over broadband service to ensure that emergency services
138 can be contacted uninterrupted.

139 **Q: Are you testifying that Starlink will be unable to meet its RDOF obligations?**

140 A: No. I am testifying that the materials responsive to this inquiry are not provided in
141 the Starlink Testimony or Application. My testimony is that examination of such

142 information is critical before the Commission can make a public interest
143 determination in Starlink's Application.

144 Permit me to give a specific example. If we examine the public interest
145 section of Mr. Johnson's testimony (Lines 394-416). The gist of the testimony is
146 that Starlink will provide service in areas that would otherwise be unserved, and this
147 is a good thing. However, no analysis is provided to identify the areas in San Juan
148 and Grand counties where Federal ReConnect Grants were applied for prior to
149 RDOF and then after Starlink received its RDOF awards, the USDA/RUS asked
150 ReConnect Grant applicants to revise their applications to remove all parts of the
151 proposed funded service areas that overlap an RDOF area because areas that the
152 FCC has classified as eligible for RDOF were ineligible for ReConnect funding.
153 These ReConnect Grants would have provided fiber connection with robust
154 broadband capacity (1GB+) and uninterrupted 24x7 voice service to all the locations
155 proposed to be served by the Starlink RDOF award using NGSO satellites. Without
156 a full record about the capacity of the Starlink service for the more than 8,600
157 locations it is obligated to serve in Utah—not to mention the other potential
158 subscribers in Utah not in the ETC area—I recommend the Commission deny the
159 Application.

160 **IV. Service Details**

161 **Q: Turning now to the service details of the Starlink Application. What**
162 **information is missing that would inform the Commission whether the**
163 **Application should be granted?**

164 **A:** Well, the only pricing information Starlink provides is that its services will be
165 “reasonably comparable to rates offered in urban areas” (Johnson, Lines 318-319)
166 and that prices will be comparable to existing competitor services in established

167 areas of Utah (Johnson, Lines 385-386). It is obvious that such statements lack the
168 detail necessary for the Commission to make a determination based on facts.

- 169 • Starlink provides no information regarding the price of the initial cost
170 of equipment. This equipment would be required for standalone voice
171 customers.
- 172 • Starlink provides no information regarding the monthly price of its
173 services (broadband only, broadband and voice, or voice only).
- 174 • Starlink provides no information regarding the price of the various
175 battery backup equipment it intends to offer to end users. This
176 equipment or its equivalent would be necessary to supply power to the
177 equipment needed for satellite connectivity.
- 178 • For voice customers wanting to use existing telephone customer
179 premises equipment, Starlink intends to offer an analog terminal
180 adapter. Yet, no price is offered the Commission for this equipment.

181 **Q: Does the statement that services will be reasonable comparable to urban areas**
182 **provide sufficient guidance to inform the Commission on Starlink’s pricing**
183 **menu?**

184 A: No. The term reasonably comparable to urban areas may be a reference to
185 the FCC’s annual national urban rate survey that can be found at the following FCC
186 webpage: [https://www.fcc.gov/economics-analytics/industry-analysis-
187 division/urban-rate-urvey-data-resources](https://www.fcc.gov/economics-analytics/industry-analysis-division/urban-rate-urvey-data-resources). The “reasonable comparability
188 benchmark result” provided in the FCC’s 2021 broadband service report for
189 100/10Mbps unlimited capacity service is \$106.20 per month. There is no Starlink
190 information on whether alternative speed and capacity tiers will be available at
191 lower more affordable prices.

192 The FCC’s 2021 voice service report identifies that voice service rates are
193 reasonably comparable if they are less than two standard deviations from the
194 national urban average. This is a monthly benchmark is \$54.75 for unlimited or flat-
195 rate local service. As the Commission is aware, the Utah local service benchmark
196 for incumbent local exchange service is \$18.00 excluding EAS charges, subscriber
197 line charges, access recovery charges (if applicable), and other surcharges and fees.
198 The problem we have in this proceeding is that Starlink has represented that its rates
199 will be “comparable” without offering any guidance on what it will be comparing
200 its rates to—will its rates be compared to urban averages provided by the FCC or
201 will Utah services and benchmarks be used? At the very least, the Commission
202 would need to know all the initial and recurring charges Starlink proposes to charge
203 standalone voice customers in the area where it seeks ETC designation. And yet,
204 this information is not available. In fact, Starlink is even silent on what “white label”
205 voice provider will be used for its service. I submit that without this minimum
206 amount of information, the Commission is unable to determine whether the Starlink
207 application is in the public interest.

208 **Q: Does this conclude your testimony?**

209 A: Yes. I would like to reserve the right to supplement or amend this testimony as more
210 information is provided by Starlink regarding its technical capacities and service
211 plans.

CERTIFICATE OF SERVICE

I hereby certify that on the 31st day of March, 2021, I served a true and correct copy of the Direct Testimony of Douglas Meredith in Docket 21-2624-01 via e-mail transmission to following persons at the e-mail addresses listed below:

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