

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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| In the Matter of PROMOTING TELEHEALTH IN RURAL AMERICA |)))))) | WC Docket No. 17-310 |
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COMMENTS OF SPACE EXPLORATION TECHNOLOGIES CORP.

Space Exploration Technologies Corp. (“SpaceX”) hereby comments on the Notice of Proposed Rulemaking¹ regarding new procedures for support of rural healthcare providers under the Rural Health Care (“RHC”) Program. By taking the steps outlined in the NPRM, the Commission will provide strong incentives to rural healthcare providers to take advantage of changes in the technological and competitive landscape since the RHC Program began in 1997, expanding the range of services and service providers available to the medical community.

BACKGROUND

SpaceX was founded in the United States in 2002 by Chief Executive Officer and Lead Designer Elon Musk with the express goal of dramatically improving the reliability, safety, and affordability of space transportation. Today, it is the world’s largest launch services provider measured by missions under contract, with over 100 missions on its manifest representing more than \$12 billion in signed contracts with NASA, the Department of Defense, commercial satellite

¹ *Promoting Telehealth in Rural America*, WC Docket No.17-310, Notice of Proposed Rulemaking and Order, FCC 17-164 (rel. Dec. 18, 2017) (“NPRM”).

operators, and allied governments worldwide. The company has more than 6,000 employees in headquarters, launch, and development facilities located wholly in the United States.

SpaceX designs, manufactures, and operates highly sophisticated space systems. The Falcon 9 launch vehicle has successfully flown 46 times since 2010, and its future manifest represents the majority of global commercial satellite launches. Falcon 9 is the world's only orbital launch vehicle system with a fully reusable booster. The first stage of the Falcon 9 has safely landed 21 times following operational launches to space, and SpaceX has flown four flight-proven, or previously flown, first-stages on four operational flights for our commercial customers and the National Aeronautics and Space Agency ("NASA") to date. Additionally, SpaceX developed Dragon, a highly sophisticated spacecraft, which routinely conducts critical cargo resupply missions to the International Space Station ("ISS") under contract with NASA. Later this year, Dragon will carry astronauts to the ISS for NASA.

SpaceX's proven capability to design complex spacecraft and deploy them routinely and safely into orbit is critical as SpaceX now prepares to deploy a satellite constellation for the provision of global broadband services. Having revolutionized space transportation, SpaceX intends to leverage both its launch capabilities and proven manufacturing expertise to create, deploy, and operate an unprecedented broadband satellite network. In November 2016 and March 2017, SpaceX submitted applications to the Commission for approval of orbital deployment and station licenses for an initial constellation of 4,425 Ka/Ku-band Low Earth Orbiting ("LEO") satellites and a subsequent, complementary constellation of 7,518 V-band Very Low Earth Orbiting ("VLEO") satellites. These constellations are specifically designed to deliver broadband services directly to end-users anywhere in the United States or around the world at fiber-like speeds. Low latencies comparable to planned 5G terrestrial systems -- on the

order of 25 to 35 milliseconds -- are expected as a result of deploying SpaceX's satellites far closer to the Earth than traditional geostationary orbit ("GSO") satellites. SpaceX's LEO satellites will operate at altitudes of 1,110-1,325 km and its VLEO satellites at 335-345 km, while GSO satellites operate at 35,786 km.² SpaceX anticipates that an initial deployment of as few as 800 satellites will be capable of providing high-speed, low-latency broadband throughout the U.S. and anywhere on the planet.

THE COMMISSION'S PROPOSALS WILL IMPROVE SERVICE TO HEALTHCARE PROVIDERS

These ambitious plans dovetail well with the goals of the RHC Program's Telecom Program, which is intended to make services more affordable for healthcare providers by subsidizing the difference between urban and rural rates for comparable services.³ As implemented, however, the Telecom Program's methodology for calculating "rural" and "urban" rates is heavily dependent on rate data from the service provider chosen by the particular healthcare provider. This approach may have made sense in 1997, when incumbent wireline providers were likely to be the only recipients of Telecom Program support and would, in any case, be the only providers of comparable services elsewhere in the rural area or nearby urban areas. As the NPRM explains, however, this approach ultimately resulted in some service providers submitting rate information that maximized the rural rate and minimized the urban rate so as to obtain the largest possible subsidy.⁴ As a result of such distortions, the size of the Telecom Program has increased substantially.

Escalation in health-related demand for broadband services could partially explain the

² See Kota, S. & Pahlavan, K., *Broadband Satellite Communication for Internet Access* §§ 2.3.3, 2.3.4 (2011).

³ See NPRM, ¶ 5.

⁴ See *id.* ¶¶ 8-13.

gradual growth in the program, and it is true that U.S. healthcare providers – like the general population and other institutions – have used an increasing amount of data services over the last two decades and show no sign of slowing down their need for more. Certainly, this could explain the increase in the size of the Telecom Program shown from 2004 to 2011, when total commitments tripled from \$31 million to \$102 million. Increased need for data services does not, however, adequately explain how the total unsubsidized urban rate dropped from just under 40% of Telecom Program commitments in 2011 to 5% in 2016.⁵ This can only be explained by price insensitivity created by the structure of the Telecom Program: service providers have an incentive to make their service attractive to healthcare providers by constraining the urban rate as much as possible, but then creating high rural rates that are paid entirely by the fund. Such distortions are a consequence of pegging rural and urban rates on data submitted by the service providers themselves, as is allowed by the current structure of the Telecom Program.

SpaceX thus supports the Commission’s proposals⁶ to increase the transparency and objectivity of the rate setting process as set forth in the NPRM. While the availability of competitive rate information may be limited in certain rural areas, the benefit of requiring service and healthcare providers to provide an average rate for all same or similar services, or at least publicly available rates in another comparable rural area, would be that USAC could then review verifiable rural rates quickly. Similarly, limiting the urban rate to an average rate for a functionally similar service offered in a city of 50,000 or more in the state would similarly provide an objective and independently verifiable standard. For both rural and urban rates, a USAC database of rural and urban rate data, based on public sources, will eventually make it faster and easier for applicants to show that their proposed rates are representative of what would

⁵ *Id.*

⁶ *Id.* ¶¶ 62-69.

be charged for a service in the area.

Using average rates and building an independent database not only injects much needed transparency into the process, it acknowledges existing and emerging competitive alternatives to the wireline services that now comprise the majority of service providers participating in the Telecom Program. LEO and VLEO satellite constellations such those proposed by SpaceX will be part of the overall broadband landscape and the U.S. health sector will benefit from nationwide availability of data services at fiber speeds and with low latency and competitive pricing. Updating the RHC Program's recognition of emerging technology platforms and competitive providers can also offer a powerful market-based constraint on the rate setting process. Indeed, given that the Telecom Program is premised on the concept of providing a subsidy to cover the difference between urban and rural rates "if any," the advent of nationwide LEO and VLEO broadband service offerings could effectively level the current disparity between the recurring broadband service rates available to hospitals in urban and rural areas, and dampen the need to expand subsidy programs like the Telecom Program.

THE COMMISSION SHOULD ELIMINATE ARTIFICIAL, TECHNOLOGY-BASED CONSTRAINTS

SpaceX agrees with the Commission's proposal⁷ to eliminate section 54.609(d) of the rules, which limits support for a satellite service to the amount available for a terrestrial service. Should the Commission adopt its proposal to use an average of publicly available rates (including rates for satellite service) to determine the rural rate, this will act as the mechanism to constrain the rural rate as applied to *all* providers. Assuming that future providers of rural telehealth will include not only wireline, but also satellite, fixed wireless, and other platforms, it

⁷ *Id.* ¶ 65.

would no longer be reasonable to constrain one particular technology, especially if that technology was no longer able to rely on its own rates. Continuing to apply this rule will only incentivize rate gaming rather than the accurate reporting of rates by service providers in rural areas.

THE HCF PROGRAM SHOULD NOT BE CONSIDERED SUBORDINATE TO THE TELECOM PROGRAM

The Commission has asked whether it should prioritize the Telecom Program over the HCF Program when the RHC Program cap (currently \$400 million) is exceeded, thus changing its current approach of treating the HCF Program and the Telecom Program equally.⁸ SpaceX supports the continuation of the FCC’s current approach. The HCF Program provides support -- \$160 million in 2016 --- for data services that have become crucially important to how U.S. healthcare providers operate in the 21st century. As satellite, fixed wireless and other technologies begin to offer more and better options for broadband service to healthcare institutions, the HCF Program can provide a powerful tool for encouraging and expanding the deployment and adoption of broadband capabilities that can serve areas that need them the most, at recurring rates comparable to well-served urban areas.

Importantly, the Telecommunications Act does not require the Commission to treat the Telecom Program and the HCF Program differently. Section 254(h)(1)(A) required that the difference between urban and rural rates be made part of the universal service system, and led to the Telecom Program. Section 254(h)(2)(A) stated that Commission “shall establish competitively neutral rules . . . to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all public and

⁸ *Id.* ¶ 32.

non-profit . . . healthcare providers” and led to the HCF Program. The structure of the Telecommunications Act makes neither section or their respective obligations subordinate to the other. Each of these requirements is an obligation on the universal service system and the Commission. The obligation to enhance access to advanced telecommunications and information services is limited only by the requirement that the Commission’s rules be technically feasible and economically reasonable – *not* that support should only be provided if there is money left over from some other universal service obligation.

The Commission is thus not required by the Telecommunications Act to prioritize the Telecom Program over the HCF Program and should continue to treat them equally, particularly given the increasing importance of access to broadband services. The Commission should certainly plan to treat the programs equally as it assesses the impact of far-ranging proposals that promise to place the entire system of support for rural healthcare providers on a stronger and more rational footing.

CONCLUSION

For the foregoing reasons, the Commission should (1) move forward with its proposals to increase transparency and objectivity of the Telecom Program rate setting process, (2) eliminate Section 54.609(d) of the rules and (3) continue its current approach of treating the Telecom program and the HCF Program equally when funding requests exceed the RHC Program cap. SpaceX commends the Commission for undertaking the important work of updating the RHC Program, and expects that its actions will result in better services for a broader number of healthcare institutions.

Respectfully submitted,

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