ENERGY & COMMERCE
CHAIR RODGERS

MEMORANDUM 2/6/2023

To: Members, Subcommittee on Communications and Technology
From: Majority Staff
Re: Communications and Technology Subcommittee Hearing

I. INTRODUCTION

On Wednesday, February 8, 2023, at 10:30 a.m., the Subcommittee on Communications and Technology will hold a hearing in 2322 Rayburn House Office Building titled "Liftoff: Unleashing Innovation in Satellite Communications Technologies." The following witnesses are expected to testify:

II. WITNESSES

Panel 1

- William Richardson, Deputy Associate General Counsel for Agenda Review, Federal Communications Commission
- Charles Glass, Chief, International Spectrum Policy Division, National Telecommunications and Information Administration

Panel 2

- David Goldman, Senior Director of Satellite Policy, SpaceX
- Peter Davidson, Vice President of Global Government Affairs & Policy, Intelsat
- Whitney Q. Lohmeyer, Professor of Engineering, Olin College of Engineering
- Danielle Piñeres, Vice President of Regulatory Affairs & Compliance, Planet Labs

III. BACKGROUND

Closing the digital divide and encouraging innovation in communications technologies in the United States has been a longstanding priority for the Committee on Energy and Commerce. Communications services provided by satellite operators are an important component of the marketplace. Satellite operators provide broadband service to homes and businesses as well as

mission critical services like highly reliable voice, video, data, and observation capabilities to critical infrastructure companies and the Federal government.[1]

Selected Issues:

1. Satellite Communications Licensing

The Federal Communications Commission (FCC) has jurisdiction and authority to regulate "all interstate and foreign communication by wire or radio and all interstate and foreign transmission of energy by radio, which originates and/or is received within the United States…and to the licensing and regulating of all radio stations as hereinafter provided."[2] The FCC is also responsible for authorizing the use of electromagnetic spectrum ("spectrum") in the United States, and has authority to "[m]ake such rules and regulations and prescribe such prescriptions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of the Act…".[3] The FCC has used this authority to regulate the transmission and reception of satellite communications for decades, and therefore plays an important role in advancing the availability of satellite-provided communications services.[4]

The FCC licensed the first private telecommunications satellite in 1973,[5] responding to a request by the American Broadcasting Company in 1965 for permission to operate a satellite for the purpose of distributing television programming to affiliate TV stations.[6] In 1970, the FCC issued a policy statement to enhance flexibility for licensees to provide a range of satellite services without unnecessary regulatory barriers, which helped pave the way for the development of a domestic communications satellite industry.[7] During the 1980s, the FCC granted an additional four groups of domestic Fixed Satellite Service (FSS) authorizations, including those in geostationary orbit (GSO),[8] and in the 1990s, the FCC allocated spectrum and

[1] *See*, 2022 Communications Marketplace Report, Federal Communications Commission, at para. 174. Rel. December 30, 2022. Available at: https://www fcc.gov/reports-research/reports/consolidated-communications-marketplace-reports/CMR-2022.
[2] Communications Act of 1934 § 2 at 47 U.S.C. 152.
[3] 47 U.S.C. 303(r).
[4] Communications Act of 1934 §§ 2; 303 at 47 U.S.C. 152; 47 U.S.C. 303(r).
[5] Western Union Telegraph Co., 38 F.C.C.2d 1197 (1973).
[6] *See*, *"Establishment of Domestic Communication-Satellite Facilities by Nongovernmental Entities,"* Report and Order, 22 F.C.C.2d 86, app. B, at 108 (1970).
[7] *See*, *"Establishment of Domestic Communications-Satellite Facilities by Non-Governmental Entities,"* First Report and Order, 22 FCC 2d 86 (1970), Second Report and Order, 35 FCC 2d 844 (1972), recon., Memorandum Opinion and Order, 38 FCC 2d 665 (1972).
[8] *See*, "1980 Orbit Assignment Order," 84 FCC 2d at 584; "Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service," Memorandum Opinion and Order, 94 FCC 2d 129 (1983), recon. FCC 84-32 (Feb. 2, 1984), further recon. (May 15, 1984); "Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service," Memorandum Opinion and Order, 50 Fed. Reg. 35228 (1985) ("1985 Orbit Assignment Order"), recon. denied, FCC 86-376 (rel. Aug. 26, 1986); "Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service," Memorandum Opinion and Order, 3 FCC Rcd 6972 (1988) ("1988 Orbit Assignment Order").

issued service rules for additional satellite services in low-Earth orbit (LEO): the Little LEO and Big LEO services.[9]

In recent years, the satellite communications marketplace has seen rapid development and innovation in a short period of time.[10] In 2016, the FCC opened a processing round for non-geostationary Orbit (NGSO) FSS systems, where 10 applicants were determined to be acceptable for filing.[11] In 2020, the FCC opened a second processing round for NGSO FSS systems, and the FCC has received 8 applications or petitions.[12] Despite the work of FCC staff to review applications, many applications still face delay given the complex nature of the applications and novel issues raised by technological advancements that were not envisioned when the FCC's existing rules were written.

2. Processing Rounds

Under the FCC's current rules, entities seeking authorization to operate a NGSO satellite system to provide FSS systems do so through "processing rounds."[13] If the application is the first application in a processing round, and the FCC determines it is acceptable for filing, the application serves as the "lead application." The FCC then puts the lead application on public notice and sets a cutoff date by which other competing applications may be filed and other pleadings or petitions to deny may be filed.[14] At the completion of the processing round, the Commission grants any application that meets its requirements.[15] Because NGSO FSS licensees share the same frequencies, they are also required to coordinate the use of spectrum with other users in those frequencies in good faith.[16] Under the current rules, NGSO FSS systems revert to a

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[9] *See*, *"Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum to the Fixed-Satellite Service and the Mobile-Satellite Service for Low-Earth Orbit Satellites,"* Report and Order, 8 FCC Rcd 1812 (1993); *Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service*, Report and Order, 8 FCC Rcd 8450 (1993); and *See*, "Amendment of Section 2.106 of the Commission's Rules to Allocate the 1610-1626.5 MHz and the 2483.5-2500 MHz Bands for Use by the Mobile-Satellite Service, Including Non-geostationary Satellites," Report and Order, 9 FCC Rcd 536 (1994); Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands, Report and Order, 9 FCC Rcd 5936 (1994), on recon., 11 FCC Rcd 12861 (1996).

[10] *See*, "In the Matter of Expediting Initial Processing of Satellite and Earth Station Applications," Notice of Proposed Rulemaking, Federal Communications Commission at para. 11. (IB Docket Nos. 22-411; 22-271). Rel. Dec 22, 2022. Available at: https://www fcc.gov/document/fcc-takes-latest-step-improve-satellite-application-process

[11] *See*, *"Applications Accepted for Filing, Cut-Off Established for Additional NGSO-Like Satellite Applications or Petitions for Operations in the 12.75-13.25 GHz, 13.85-14 GHz, 18.6-18.8 Ghz, 19.3-20.2 GHz, and 29.1-29.5 GHz Bands,"* Public Notice, Federal Communications Commission. Released May 26, 2017. Available at: https://docs fcc.gov/public/attachments/DA-17-524A1.pdf.

[12] *See*, *"In the Matter of Application for Authority to Deploy and Operate a Ka-Band Non-Geostationary Satellite Orbit System,"* Order and Authorization, Federal Communications Commission (Adopted Jul. 29, 2020).

[13] 47 C.F.R. 25.157(c); *See*, "In the Matter of Amendment of the Commission's Space Station Licensing Rules and Policies", First Report and Order and Further Notice of Proposed Rulemaking, Federal Communications Commission (IB Docket No. 02-34). Rel. May 19, 2003. Available at: https://docs.fcc.gov/public/attachments/FCC-03-102A1.pdf.

[14] *Id*.

[15] 47 C.F.R. 25.156.

[16] 47 C.F.R. 25.261(b).

band splitting procedure that reduces the use of spectrum by each system absent a coordination agreement to avoid system interference.[17]

3. International Licensing Considerations

Entities that are licensed to provide NGSO FSS services in another country may also serve the U.S. market.[18] However, these entities must petition the FCC for authorization to transmit to Earth stations in the United States, also known as "market access." Under the FCC's current rules, petitions for grant of market access are granted on the same basis as an application for a license. Due to the global nature of the satellite marketplace, the use of spectrum and orbital resources is coordinated by the International Telecommunication Union (ITU). These resources are limited, and the ITU has devised a process that gives priority to systems that have filed their systems earlier than others. Domestic administrations, like the FCC, must ensure that their rules to license satellite systems are consistent with ITU regulations.

4. Launch Spectrum

Commercial space launch activity in the United States has increased in recent years, from 1 launch in 2011 to 39 in 2020.[19] While the Federal Aviation Administration (FAA) licenses the commercial launch of vehicles into space, the FCC, in coordination with the National Telecommunications and Information Administration (NTIA), provides authorization for launch vehicles' access to spectrum.[20] Commercial launch vehicles must have access to spectrum for reliable communications and telemetry, tracking, and control (TT&C). Because many of the spectrum bands used for these commercial space launch activities are used by Federal users, the FCC must coordinate with NTIA to protect primary Federal users in the band.[21] Under the FCC's current rules, the FCC cannot license commercial entities to use these bands on an interference-protected basis during space launches. Rather, the FCC provides commercial entities a special temporary authorization (STA) to use spectrum for communications and TT&C functions and provides such authority on a case-by-case basis.

5. Satellite to Cellular Communications

There has been increased interest in using satellite technologies to provide cellular services, or support cellular services, from space in addition to terrestrial infrastructure.[22] Some satellite operators have applied for authorization from the FCC to provide these services in the United States, and others have requested experimental authorization to test the potential for these technologies. Additionally, satellite operators and wireless carriers have announced partnerships

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[17] 47 C.F.R. 25.261(c).
[18] 47 C.F.R. 25.137.
[19] *See*, https://www.faa.gov/newsroom/new-era-us-commercial-space-transportation-begins.
[20] *See*, "Amendment of Part 2 of the Commission's Rules for Federal Earth Stations Communicating with Non-Federal Fixed Satellite Service Space Stations," Federal Communications Commission. (ET Docket No. 13-115) Notice of Proposed Rulemaking and Notice of Inquiry, 28 FCC Rcd 6698, 6727-28, 6730, paras. 76, 79, 85 (2013).
[21] 47 CFR § 2.102(c)
[22] *See*, e.g., https://www.cnbc.com/2022/10/23/space-race-to-connect-satellites-to-phones-with-apple-spacex-att html.

to integrate non-terrestrial networks and terrestrial networks to eliminate coverage gaps.[23] Private-sector standards bodies are also paving the way for continued integration of satellite services and terrestrial 5G and 6G networks.[24]

These advances in technology raise new regulatory questions, such as the ability to use spectrum traditionally used for cellular technology from outer space, whether wireless emergency alerts ("WEA alerts") could be provided via satellite, or whether satellite systems could provide 9-1-1 service in areas where terrestrial networks are incapable of providing 9-1-1. The Communications Act directs the FCC to regulate interstate and foreign communication by wire or radio, "for the purpose of promoting safety of life and property…".[25] In remote or unserved areas, Americans may not have service from a terrestrial network to call 9-1-1 or receive WEA alerts, and having such capability may be lifesaving.

IV. LEGISLATION

On Wednesday, the Subcommittee on Communications and Technology will review the following legislation.

1. H.R.___, the Satellite and Telecommunications Streamlining, or "SAT Streamlining" Act (Rep. Cathy McMorris Rodgers)

The discussion draft is led by Energy and Commerce Committee Chair Cathy McMorris Rodgers (R-WA) and Ranking Member Frank Pallone, Jr. (D-NJ). The discussion draft would amend the Communications Act of 1934 to add a new section providing authority for the FCC to grant licenses for GSO and NGSO satellite services, grants of market access for foreign-licensed GSO and NGSO satellite services, and authorization for Earth stations (including gateway stations). Subject to certain exceptions, the discussion draft requires the FCC to grant or deny a request for a new application for a license, a major modification to a license, a new gateway Earth station, or a receive-only earth station within 1 year. The discussion draft would also provide authority for the FCC to grant modifications to, and renewals of, a license or grant of market access granted under this authority. Finally, the discussion draft requires the FCC to issue rules within 18 months after the date of enactment to establish: 1) specific, measurable, and technology neutral performance objectives for space safety and orbital debris; 2) specific minor modifications or classes of minor modifications that warrant expedited review; 3) specific actions that constitute a failure to coordinate in good faith; 4) a quantifiable level of protection for how NGSO systems share spectrum; and, 5) the manner in which an applicant for certain modifications should notify the FCC of their request.

2. H.R. 675, the Secure Space Act (Rep. Frank Pallone, Jr.)

H.R. 675 was introduced by Energy and Commerce Committee Ranking Member Frank Pallone, Jr. (D-NJ) and Chair Cathy McMorris Rodgers (R-WA) on January 31, 2023. The bill

[23] See, https://www.lightreading.com/satellite/how-and-when-you-might-connect-your-smartphone-to-satellite/d/d-id/780114.
[24] *See*, https://www.5gamericas.org/wp-content/uploads/2022/01/5G-Non-Terrestrial-Networks-2022-WP-Id.pdf.
[25] 47 U.S.C. 151.

would amend the Secure and Trusted Communications Networks Act to prohibit the FCC from granting a license or grant of market access for an NGSO satellite system if the system was owned or controlled by an entity, or the entity's affiliate, that provides covered communications equipment or services. Under the Secure and Trusted Communications Networks Act, covered communications equipment or services pose an unacceptable risk to national security.

3. **H.R.___, the Advanced, Local Emergency Response Telecommunications Parity or "ALERT Parity" Act (Rep. Bill Johnson)**

The discussion draft is led by Representatives Bill Johnson (R-OH) and Kim Schrier (D-WA). The discussion draft would require the FCC to issue rules within 18 months of enactment to establish an application process for entities seeking to provide wireless emergency alerts and 9-1-1 service to unserved areas. The discussion draft would also require the FCC to establish service rules whereby providers of emergency connectivity service may access spectrum held by a licensee, but that use of the spectrum to provide emergency connectivity service may not cause interference to a licensee that holds the license.

4. **H.R. 682, the Leveraging American Understanding of Next-Generation Challenges Exploring Space, or "LAUNCHES" Act (Rep. Darren Soto)**

H.R. 682 was introduced by Representatives Darren Soto (D-FL) and Neal Dunn (R-FL) on January 31, 2023. The bill would require the FCC to finish a proceeding to adopt service rules for access to certain frequencies for commercial space launches and commercial space reentries. The bill would also require the FCC to allocate those frequencies, some of which are currently used by Federal users, for non-Federal use on a secondary basis.

5. **H.R.___, the Precision Agriculture Satellite Connectivity Act (Rep. Robert E. Latta)**

The discussion draft is led by Representatives Robert E. Latta (R-OH) and Robin Kelly D-IL). The discussion draft would require the FCC to review its rules regarding certain satellite services to determine if changes to their rules would promote precision agriculture. If the FCC determines that there are rule changes that could promote precision agriculture, the discussion draft would require the FCC to develop recommendations and submit them to Congress within 1 year after enactment.

V. KEY QUESTIONS

- What challenges exist in the FCC's regulatory process for licensing commercial satellite communications services and how can that process be improved?
- How can Congress encourage innovation, competition, and U.S. leadership in the commercial satellite communications marketplace?
- What challenges exist in receiving FCC authorization to deploy satellite to cellular services?

- What challenges exist in receiving FCC and NTIA authorization for the use of spectrum to launch satellite communications services?

VI. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Kate O'Connor or Evan Viau of the Committee Staff at (202) 225-2927.