

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Comprehensive Review of Licensing and) IB Docket No. 12-267
Operating Rules for Satellite Services)
)

To: The Commission

**COMMENTS OF
ECHOSTAR SATELLITE OPERATING CORPORATION
AND HUGHES NETWORK SYSTEMS, LLC**

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EXECUTIVE SUMMARY

EchoStar Satellite Operating Corporation and Hughes Network Systems, LLC (collectively with their affiliates, “EchoStar”) submit these comments in the Comprehensive Review of Licensing Operating Rules for Satellite Services proceeding. EchoStar supports the FCC’s effort to further streamline Part 25 of the FCC’s rules and increase operational flexibility for operators, hence bringing more innovative services to consumers on a more efficient basis. As an initial matter, the Commission should adopt a set of principles as a guide through this proceeding -- regulatory certainty, operational flexibility and technical neutrality. Based on these principles, EchoStar urges the FCC to modify its Part 25 rules in order to:

- allow operators to submit an Advanced Publication Information filing at the International Telecommunication Union before submitting an application with the Commission;
- eliminate all milestones except the final bringing into operation milestone;
- adopt the FCC’s reverse bond proposal; and
- eliminate the three-strike rule.

EchoStar further urges the FCC to adopt additional flexibility and streamlining measures to ensure that satellite operators can offer the most innovative, spectrally efficient and cost-effective services to U.S. consumers. These include:

- permitting U.S. satellite licensees to utilize an existing satellite to bring the orbital location into use as opposed to being required to construct and launch a new satellite;
- allowing U.S. satellite licensees the option, if they meet certain financial criteria, to use a corporate guarantee, as an alternative to a bond, to protect against spectrum and orbital warehousing;

- permitting unlicensed receive-only earth stations to receive signals from any non-U.S.-licensed space station, or in the alternative eliminating licensing requirements for receive-only earth stations; and
- expanding the Permitted Space Station List to include both U.S. and non-U.S.-licensed satellites authorized to serve the United States in the extended C-band and extended Ku-band.

Finally, EchoStar addresses a number of the technical rule changes proposed in the Further Notice of Proposed Rulemaking.

Modification of the Part 25 rules as EchoStar urges will best serve the public interest by providing sufficient flexibility and regulatory certainty to U.S operators to invest the required capital to bring innovative satellite services to U.S. consumers.

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I. INTRODUCTION

EchoStar Satellite Operating Corporation (“ESOC”) and Hughes Network Systems, LLC (“Hughes”) (collectively with their affiliates, “EchoStar”) submit these comments in the above-captioned proceeding and applauds the FCC for continuing to build on the success of this proceeding to reform and streamline the U.S. satellite licensing process.¹ EchoStar supports the FCC’s effort to further streamline Part 25 of the FCC’s rules and increase operational flexibility for U.S. satellite operators. Further modification and streamlining of the Part 25 rules will enable the satellite industry to bring innovative satellite services to consumers on a cost-effective and timely basis and will make the United States a more attractive administration for licensing satellites.

In order to meet this important goal, EchoStar supports rule modifications that will:

¹ See *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Further Notice of Proposed Rulemaking, 29 FCC Rcd 12116 (2014) (“FNPRM”).

- allow operators to submit an Advanced Publication Information (“API”) filing at the International Telecommunication Union (“ITU”) before submitting an application with the Commission;
- eliminate all milestones except the final bringing into operation milestone;
- adopt the proposal whereby the value on the bond increases over time -- the reverse bond proposal;
- eliminate the three-strikes rule;

EchoStar further urges the FCC to adopt additional flexibility and streamlining measures to ensure that satellite operators can offer the most innovative, spectrally efficient and cost-effective services to U.S. consumers. These include:

- permitting U.S. satellite licensees to utilize an existing satellite to bring a U.S. orbital location into use as opposed to being required to construct and launch a new satellite;
- allowing U.S. satellite licensees the option, if they meet certain financial criteria, to use a corporate guarantee, as an alternative to a bond, to protect against spectrum and orbital warehousing;
- permitting unlicensed receive-only earth stations to receive signals from any non-U.S.-licensed space station, or in the alternative eliminating licensing requirements for receive-only earth stations; and
- expanding the Permitted Space Station List to include both U.S. and non-U.S.-licensed satellites authorized to serve the United States in the extended C-band and extended Ku-band.

Modification of the Part 25 rules, as discussed herein, will best serve the public interest by encouraging use of the United States as a space station licensing administration and providing

sufficient flexibility and regulatory certainty to U.S operators to invest the required capital to bring innovative satellite services to U.S. consumers. EchoStar looks forward to continuing to work with the Commission on satellite licensing reform.²

II. THE CONTINUED EVOLUTION OF ECHOSTAR AND THE SATELLITE INDUSTRY REQUIRES MORE STREAMLINED REGULATION

A. Overview of EchoStar and the Growth of Its Satellite Services

Founded in 1980, EchoStar, with its fleet of 23 geostationary-orbit (“GSO”) satellites, has grown to become the largest U.S. commercial geostationary satellite operator and the fourth largest in the world.³ Today EchoStar’s satellite fleet provides innovative multi-channel video programming distribution, broadband, mobile and backhaul services to consumers in the United States and internationally. Further, EchoStar supports DISH Network’s satellite operations, which provides subscription satellite television to over 14 million U.S. consumers.⁴

Through Hughes, EchoStar is the largest provider of satellite broadband service. Hughes provides satellite broadband Internet service to over one million customers in North America with the SPACEWAY 3 and EchoStar XVII (JUPITER 1) satellites.⁵ The EchoStar XVII satellite employs high-throughput technology, which allows for more efficient spectrum use and

² EchoStar will file with the Commission an exhibit or appendix detailing its specific rule changes in reply comments.

³ Currently, ESOC operates fourteen satellites in the Direct Broadcast Satellite (“DBS”) or Broadcasting-Satellite Service (“BSS”), six in the Fixed-Satellite Service (“FSS”), and three in the Mobile-Satellite Service (“MSS”).

⁴ DISH DBS Corp, Quarterly Report (Form 10-Q), at 4 (Nov. 4, 2014). EchoStar Technologies L.L.C., through Sling Media Inc., designs and manufactures innovative set-top boxes, including the Joey and Hopper.

⁵ See Hughes, EchoStar XVII – JUPITER, <http://www.hughes.com/technologies/satellite-platforms/echostar-xvii-jupiter> (last visited Jan. 28, 2015).

provides capacity in excess of 100 Gbps.⁶ With the planned 2016 launch of the EchoStar XIX (JUPITER 2), another high-throughput satellite, Hughes will further expand capacity for its satellite broadband Internet service throughout North America.⁷ Accordingly, based on its substantial U.S. satellite operations, EchoStar has a strong interest in the FCC's efforts to reform and streamline its Part 25 rules.

B. The Satellite Industry as a Whole Continues to Evolve

The satellite industry, like other sectors of the communications industry, continues to develop in ways that require the evolution of the regulations that govern satellite licensing and operations.⁸ Satellite technology has evolved to provide a variety of services to U.S. consumers and is an important component of advanced video, data, and mobile and other communication services.⁹ For example, satellite operators have become leaders in television distribution to the home as a result of their large investments in Direct-to-Home ("DTH") services resulting in

⁶ *See id.* High-throughput satellites provide double the throughput capacity or more but use the same spectrum allocations (C, Ku- and Ka-bands). *See* The Tauri Group, State of the Satellite Industry Report, at 20 (Sept. 2014) ("Statement of the Satellite Industry Report").

⁷ Chris Bergin, *JUPITER 2/EchoStar XIX Deal Signed for 2016 Ariane 5 Launch*, NASA SPACEFLIGHT (Mar. 21, 2013), <http://www.nasaspaceflight.com/2013/03/jupiter-2echostar-xix-deal-2016-ariane-5-launch/>. In addition to operations in the United States, EchoStar also holds authorizations to operate internationally. These authorizations include licenses for mobile satellite service ("MSS") with a complimentary ground component in the European Union; Brazilian concessions for DTH, MSS and broadband satellite services; and various Mexican concessions.

⁸ *See* News Release, *FCC Adopts Major Process Reform Proposal to Streamline Satellite Rules* (Sept. 30, 2014) (FNPRM "proposes changes . . . to better accommodate evolving technology"), *and* FNPRM, 29 FCC Rcd at 12235, Statement of Chairmen Wheeler (" . . . proposed changes would go a long way in making the regulatory approval process for satellite licenses easier and more efficient.")

⁹ *See* Satellite Spectrum Initiative, http://satellite-spectrum-initiative.com/content.php?s_ID=1 (last visited Jan. 9, 2015) (discussing the ways in which the satellite industry continues to innovate).

service to over thirty-four million Americans.¹⁰ Also, with the development of high-throughput satellites, satellite operators are providing high-speed broadband service directly to consumers.¹¹ The satellite industry is also at the cutting edge of many other services – whether fixed or mobile.

These advances in the satellite industry directly benefit U.S. consumers, industry and the government through providing needed innovative, anytime, anywhere communications services at cost-effective rates. In order to ensure that these services continue to evolve and are available to U.S. consumers on a timely and cost-effective basis, it is critical that the FCC remove unnecessary regulatory barriers. While incremental changes, such as eliminating certain data requirements, were a good step in the first part of this proceeding,¹² the FCC must go further in order to enable the satellite industry to provide to U.S. consumers and businesses the most

¹⁰ See DISH DBS Corp, Quarterly Report (Form 10-Q), at 4 (Nov. 4, 2014), and DIRECTV, Quarterly Report (Form 10-Q), at 56 (Nov. 7, 2014). See also Satellite Spectrum Initiative, Always Innovating, http://satellite-spectrum-initiative.com/content.php?s_ID=1 (last visited Jan. 9, 2015) (“Satellite connections are responsible for the delivery of news, sports and entertainment programming to homes throughout the world. From program distribution, transmission of news footage, and delivery of direct-to-home services, satellites are essential for ensuring that citizens have access to up-to-the-minute information.”).

¹¹ See Press Release, Hughes Network Systems, LLC, Sept. 8, 2014, *Hughes to Highlight Growth in High Throughput Satellite Technology at VSAT 2014 Conference*, and Viasat, *High-Capacity Satellite System*, <https://www.viasat.com/broadband-satellite-networks/high-capacity-satellite-system> (last visited Jan. 27, 2015); see also Satellite Spectrum Initiative, Always Innovating, http://satellite-spectrum-initiative.com/content.php?s_ID=1 (last visited Jan. 9, 2015) (“Satellite providers are playing a key role in the provision of broadband services – and the applications they enable – specifically as a solution for rural and remote areas.” and “satellite providers are able to fully participate in this competitive market environment due to integration with DTH, wireless and other terrestrial technologies, enabling triple-play offerings.”).

¹² *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Report and Order, 28 FCC Rcd 12403, 12406 ¶ 4 (2013) (“*Satellite Licensing Report and Order*”).

innovative and cost-effective communications services possible. Accordingly, the FCC should take this opportunity adopt the changes to the governing of satellite services discussed herein.¹³

III. THE COMMISSION SHOULD ADOPT PRINCIPLES FOR GUIDING THE RULEMAKING PROCESS AND ESTABLISH THE UNITED STATES AS A MORE ATTRACTIVE FILING ADMINISTRATION

To successfully reform and streamline its satellite service and licensing rules, it is critical that the FCC adopt a set of principles to guide its decisions and work toward the goal of establishing the United States as a more attractive filing administration.

A. The Commission Should Adopt a Set of Principles for this Proceeding

The Commission should adopt a set of principles that guide any FCC decisions in this proceeding. Specifically, EchoStar proposes that the FCC adopt the following principles to guide adoption of its streamlined and reformed Part 25 rules:

- **Technological neutrality:** As the FCC has recognized in many contexts, technological neutrality is an important governing principle of the agency’s decisions.¹⁴ Accordingly, the FCC has traditionally determined to maintain a

¹³ Further, as the satellite technology enables the use of a new generation of communications satellites, including those that are cheaper to operate and may have different requirements, EchoStar urges the FCC revisit its rules, when warranted.

¹⁴ See, e.g., *Expanding Access to Broadband and Encouraging Innovation through Establishment of an Air-Ground Mobile Broadband Secondary Service for Passengers Aboard Aircraft in the 14.0-14.5 GHz Band*, Notice of Proposed Rulemaking, 28 FCC Rcd 6765, 6796 ¶ 101 (2013) (“[W]e strive to establish technology neutral rules that allow for competing technologies and changes in technology over time without the need to change our rules.”); Michael J. Copps, Acting Chairman, FCC, *Bringing Broadband to Rural America: Report on a Rural Broadband Strategy*, 2009 FCC LEXIS 2637, at 34, 56, n.327 (May 22, 2009) (“[D]ecision makers should proceed on a technology-neutral basis—by considering the attributes of all potential technologies—in selecting the technology or technologies to be deployed in a particular rural area. . . . Specifically, the Communications Act requires that universal service policies be based on the following principles: . . . [s]uch other principles as the [Federal-State Joint Board on Universal Service] and the Commission determine are necessary and appropriate for the protection of the public interest, convenience, and necessity and are consistent with this Act. The Commission adopted the additional principle that federal support mechanisms should be competitively and technologically neutral.” (citations omitted); Chairman Julius Genachowski

level playing field without favoring any one technology. Nowhere is this as important as in the licensing and operating rules that govern a communications service. Accordingly, the rules that the FCC adopts in this proceeding should place satellite on a level regulatory playing field *vis-à-vis* wireline or terrestrial wireless licensees.

- **Operational Flexibility:** It is critical that the rules governing service providers enable them to innovate, respond quickly to customer demands, and operate in a flexible manner.¹⁵ Accordingly, the rules governing satellite licensing and operations should be flexible in order to enable satellite operators to respond to market and consumer demands without unnecessary regulatory barriers.¹⁶

Remarks on Modernizing and Streamlining the Universal Service Fund, The Information Technology and Innovation Foundation, Washington, DC, 2011 FCC LEXIS 165 (“A technology-neutral approach is key to putting scarce resources to the best possible use.”); Letter from Olympia J. Snowe, United States Senator, to Julius Genachowski, Chairman, Federal Communications Commission, Oct. 22, 2009, 2009 FCC LEXIS 6657 (“Differences in regulation could present an unfair competitive advantage and infringe on the Commission’s long-held technology-neutral approach.”).

¹⁵ *Amendment of the Commission’s Rules Concerning Maritime Communications*, Fourth Report and Order and Third Further Notice of Proposed Rulemaking, 15 FCC Rcd 22585, 22598 ¶ 23 (2000) (“[A]ffording AMTS licensees operational flexibility will enhance their ability to meet customer requirements and demand, and promote regulatory parity among maritime CMRS providers and between maritime CMRS providers and other CMRS providers.”); *Amendment of the Commission’s Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services*, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8965, 8976 ¶ 22 (1996) (“Allowing service providers to offer all types of fixed, mobile, and hybrid services in response to market demand will allow for more flexible responses to consumer demand, a greater diversity of services and combinations of services, and increased competition.”).

¹⁶ *See Service Rules for Advanced Wireless Services in 2000-2020 and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, 27 FCC Rcd 16102, 16187 ¶ 224 (2012) (“AWS Report and Order”) (“[W]e expect that flexibility will allow any licensee of AWS-4 authority to respond to consumer demand.”).

- **Regulatory certainty:** In order to spur innovation and investment, it is critical that the FCC’s licensing and service rules are clear and certain. This is especially important for satellite deployment, which has a very long lead time.¹⁷ Failure to provide this certainty may negatively impact the ability of the satellite industry to invest in new services and technologies.¹⁸

By utilizing these principles to guide its decision-making here, the FCC will encourage investment in the deployment of new and innovative technologies that will directly benefit U.S consumers. EchoStar’s comments are consistent with these important principles.

B. Establishing the United States as a More Attractive Filing Administration

EchoStar, like other commercial satellite operators, examines several factors in determining which national administration it should rely upon to submit ITU filings and to obtain authorizations for its satellite system. In doing so, EchoStar has to make two key decisions: 1) which administration should license its space station and make its ITU filing; and 2) where does it require landing rights. While the landing rights portion is business driven, the administration

¹⁷ For instance, the ITU rules are set up to take that long lead time into account by giving seven years from the date of the API submission to bring a satellite network into use. Also the National Space Policy of the United States of America (“National Space Policy”) recognizes that the space industry needs to look far into the future by requiring NASA to set far reaching goals for space exploration into 2025 and beyond. *See* National Space Policy of the United States of America at 11 (June 28, 2010).

¹⁸ The National Space Policy also requires minimizing, as much as possible, the regulatory burden for commercial space activities to ensure that the regulatory environment for licensing space activities is timely and responsive, and encouraging investment in the satellite industry and the space industry in general remains critical. *See generally* National Space Policy. Also, as the United States takes into account its budgetary concerns, the private sector is left to fill the gap and ensure that the United States maintains its role a leading innovator. *See* NASA Office of Inspector General, *2014 Report on NASA’s Top Management and Performance Challenges*, at 1-3 (Nov. 14, 2014), <http://oig.nasa.gov/NASA2014ManagementChallenges.pdf> (discussing challenges in funding projects). Significantly, the U.S. space industry has demonstrated a willingness to do so and invest resources to further advance the industry. *See, e.g.*, SpaceX, <http://www.spacex.-com/about> (last visited Jan. 27, 2015). Accordingly, the FCC needs to foster an environment where this private investment continues to happen.

from which EchoStar seeks a space station authorization and makes an ITU filing is governed by a wide variety of considerations, including business, regulatory, and other considerations.

With regard to the space station authorization, some of the major considerations that EchoStar examines in selecting a satellite licensing and ITU filing administration are:

- the ability to file multiple ITU filings at the API stage and select one API filing to pursue at a later date based on the ITU coordination environment and the risk profile of completing the coordination successfully;
- the ability to make technical and other changes to the satellite design during the licensing process;
- clear and transparent licensing requirements and/or milestones;
- the ability to change certain operational parameters of the space station once licensed, including the ability to change orbital slots;
- reasonable regulatory fees, including annual and other administrative fees;
- an administration's proven record of success in coordinating with other administrations, support for its licensees in a manner consistent with the ITU Radio Regulations, and timely actions on requests for license modifications; and
- a technology neutral regime whose rules and policies provide regulatory certainty.

With regard to landing rights, EchoStar, of course, must seek these rights in whichever countries it is planning to provide service. Nonetheless, EchoStar urges the licensing administrations of those countries where it has or is planning to obtain landing rights to maintain a regulatory regime that:

- imposes minimum regulatory burdens;
- has clear, transparent, and unambiguous licensing milestones;
- has a track record of timely and predictable actions on requests for license modifications;
- imposes reasonable regulatory fees, including annual fees; and
- is technology neutral.

If the FCC takes into account the considerations discussed above as it moves forward with its reform of Part 25, the FCC will assuredly make the United States a more attractive place for satellite companies to conduct their businesses and to rely upon for their licensing requirements. Overall, the United States benefits in many ways from serving as the licensing administration for satellite systems. These benefits include enabling the U.S. space industry to maintain and grow its leadership in the international community, supporting and increasing investment in the United States, and attracting jobs to support these efforts.¹⁹

IV. STREAMLINING THE PART 25 RULES WILL CREATE A MORE COMPETITIVE SATELLITE INDUSTRY AND IN TURN BRING INNOVATIVE, COST-EFFECTIVE SERVICES TO U.S. CONSUMERS

A. A Light-Touch Regulatory Approach Allows Industries to Thrive

The U.S. satellite industry is extremely successful and has been a leader at bringing new and innovative communications services to the U.S. marketplace. In 2013, global revenue from the satellite industry was \$195.2 billion, up three percent from the year before and continuing a trend of growth.²⁰ More specifically, since 2008, the U.S. satellite industry has been growing – with an increase in annual revenues of almost thirty-three percent.²¹

¹⁹ As Commissioner Pai stated, it should be the goal of the FCC to “make the United States the most desirable country in the world for licensing and operating satellites.” FNPRM, 29 FCC Rcd at 12238, Statement of Commissioner Pai. The United States can look to the United Kingdom as an example. The United Kingdom has taken aggressive measures to attract investment in the space industry, which has included measures to simplify licensing procedures. The United Kingdom has taken the position that “the space licensing process can . . . serve to stimulate growth and investment.” *See* Government Response to the UK Space Innovation and Growth Strategy 2014-2030, Space Growth Action Plan at 2, 7 April 2014. After implementing the above-mentioned recommendation among others in 2010, the British space segment of its economy has grown on average 7.5 percent annually. *Id.* at 7.

²⁰ *See* State of the Satellite Industry Report at 4, 8.

²¹ *See id.* at 5.

EchoStar applauds the FCC’s efforts to move forward with the adoption of revised rules that will provide flexibility for satellite licensing and operations and allow for continued success in the U.S. satellite marketplace. As Chairman Wheeler has recognized, the FCC needs to change its satellite rules to “benefit consumers by increasing the speed and ease of introducing new satellite services, while promoting competition among service providers.”²² As discussed herein, adoption of certain changes to the FCC’s Part 25 rules will enable this result and will continue to support the leadership of the United States in the satellite marketplace.²³

In evaluating its Part 25 rule changes, the Commission should look to other areas where it has been most successful. As past precedent indicates, the FCC has been most successful when it has utilized a light-touch approach.²⁴ For example, when the FCC first established the regulatory regime governing cellular telephony, it had to choose between utilizing the traditional common carrier scheme and adopting a different model that recognized the absence of any

²² FNPRM, 29 FCC Rcd at 12235, Statement of Chairman Wheeler.

²³ See National Space Policy at 3, 5, and 6 (noting that a foundation of the U.S. space policy is to “strengthen U.S. leadership in space-related science, technology, and industrial bases” and “[d]emonstrate U.S. leadership in space-related fora and activities” and provide “[a] robust and competitive commercial space sector is vital to continued progress in space. The United States is committed to encouraging and facilitating the growth of a U.S. commercial space sector that supports U.S. needs, is globally competitive, and advances U.S. leadership in the generation of new markets and innovation-driven entrepreneurship.”).

²⁴ See William E. Kennard, Chairman of the FCC, Speech to Federal Communications Bar, Northern California Chapter (Jul. 20, 1999) (“The fertile fields of innovation across the communications sector and around the country are blooming because from the get-go we have taken a deregulatory, competitive approach to our communications structure - - especially the Internet. . . . For the past 30 years, the FCC has created a deregulatory environment in which the Internet could flourish.”); see also Meredith Attwell Baker, *The Slippery Slope of FCC Internet Regulation*, GIGAOM (Aug. 16, 2014), <https://gigaom.com/2014/08/16/the-slippery-slope-of-fcc-internet-regulation/> (“The U.S. is the global leader in mobile broadband thanks to ingenuity, investment and, in no small part, a balanced, light-touch regulatory approach.”); CTIA – The Wireless Association®, *Response to House White Paper on Competition Policy and Role of the FCC*, at 3-7 (Jun. 13, 2014) (“CTIA House White Paper on Competition”), <http://www.ctia.org/-docs/default-source/Legislative-Activity/ctia-response-to-house-white-paper-on-competition-policy.pdf?sfvrsn=6>.

incumbent service providers with market share. The FCC wisely chose not to impose a legacy regulatory model. Instead, the FCC crafted a regulatory regime that focused on a light touch by focusing on minimal technical requirements and licensing rules as opposed to imposing quality and service requirements.²⁵ This light-touch and flexibility approach has continued as the FCC has implemented mobile wireless rules in other spectrum bands leading to a U.S. mobile industry that produced \$189.2 billion in revenues in 2013.²⁶

By avoiding unnecessary regulation, the FCC allowed the terrestrial mobile marketplace to grow exponentially and successfully. This has led to the availability of high quality services at reasonable prices to U.S. consumers, with operators competing based on price, service offerings, and quality.²⁷ Largely as a result of the light-touch approach to regulation that has occurred in the terrestrial wireless and broadband marketplace, these industries are hotbeds of

²⁵ See *An Inquiry Into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems*, Report and Order, 86 F.C.C.2d 469, 513 ¶ 112 (1981) (“We believe we have in this Report and Order established a framework within which the needs of the public for mobile communications can be met for the foreseeable future with a minimum of regulation. Cellular systems should be capable of adapting to changing customer demands and advancing technology. Licensees in this service will have the responsibility to adapt to the changing market environment.”).

²⁶ See CTIA, Annual Wireless Industry Survey, <http://www.ctia.org/your-wireless-life/how-wireless-works/annual-wireless-industry-survey> (last visited Jan. 25, 2015). In adopting the licensing rules for mobile wireless in the 600 MHz, AWS-3, AWS-4 and H-block, the FCC has licensed all services under Part 27 for flexible use. See *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, 6870 ¶ 741 (2014); *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Report and Order, 29 FCC Rcd 4610, 4652 ¶ 114 (2014); *Service Rules for Advanced Wireless Services H Block*, Report and Order, 28 FCC Rcd 9483, 9490 ¶ 16 (2013); *AWS Report and Order*, 27 FCC Rcd at 16187-88 ¶¶ 222-26. Of course, important areas, such as ensuring protections against interference and meeting important public interest obligations must be met, but regulations that are not required for such purposes should be avoided.

²⁷ See CTIA House White Paper on Competition 3-7.

innovation. As discussed in the section below, taking this approach to the regulation of satellite services will further the U.S. satellite industry in being a world leader.

B. Adopting a Lighter Touch Approach for Satellite Will Result in Growth, Investment and Innovation

Adopting a light-touch regulatory approach comparable to that applied to terrestrial wireless services will help accelerate growth, investment, and innovation in the satellite services market. Even simple comparisons highlight the gulf that separates the Commission's command-and-control regulatory treatment of the satellite sector from the incentive-and-enforcement approach of the terrestrial wireless sector. Whereas the Part 25 satellite rules consist of approximately 156 pages of rules, the Part 24 rules for PCS runs only 36 pages. The merit of any regulatory regime obviously requires more than a mere tally of pages appearing in the Code of Federal Regulations. But, the markedly greater degree of regulatory oversight of the satellite services sector compared to the terrestrial wireless sector serves to highlight the scale of the potential economic benefit that modernization of the Commission's satellite rules could bring to satellite operators and the United States economy.

Keeping in mind the principles of technological neutrality, operational flexibility and regulatory certainty, the Commission should start the reform process by focusing on three areas: (1) providing additional flexibility to satellite service licensees; (2) simplifying and accelerating the satellite application process; and (3) rationalizing different standards and goals between satellite and terrestrial wireless services.

1. Providing Additional Flexibility to Satellite Service Licensees

Under the FCC's Part 27 regulations, terrestrial wireless licensees are permitted to deploy base stations anywhere within their licensed service area without having to obtain additional

FCC authority, as long as the base stations comply with specified technical parameters.²⁸ The FCC's geographic-based licensing approach, which accords substantial network flexibility to licensees, is a hallmark of the FCC's terrestrial wireless service rules. Indeed, the FCC recently reformed its legacy 800 MHz cellular licensing rules from a partly site-based regime to a geographic-based licensing regime, acknowledging the benefits to licensees in the form of increased flexibility and reduction in the number of administrative filings.²⁹

By contrast, FCC satellite regulations require regulatory approval for the licensing of individual space stations and, in most cases, earth stations.³⁰ Moreover, under the regulatory regime for satellite services, most license modifications are subject to prior approval by the International Bureau, imposing additional administrative burdens on licensees.³¹ For example, slightly relocating a space station to facilitate safe station-keeping, a common industry practice, requires prior FCC approval.³² Similarly, adding a new point of communications to an earth

²⁸ See, e.g., 47 C.F.R. § 27.11(a) (applications for individual sites for licensed wireless communications services are not required, except where required for environmental assessments). Similarly, subscribers of wireless services are not required to obtain separate authorizations for use of handsets. See 47 C.F.R. § 1.903 (user authority to operate a mobile or fixed station for wireless services is included in the authorization held by the licensee providing service).

²⁹ See *Amendment of Parts 1 and 22 of the Commission's Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Area*, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 14100, 14102-8 ¶¶ 4, 6-15 (2014).

³⁰ See 47 C.F.R. §§ 25.114 (identifying application requirements for space stations), 25.130 (specifying application requirements for earth stations). Blanket licensing of earth stations is permitted only in certain limited satellite frequencies, and many satellites routinely operate in a number of other satellite frequency bands. See, e.g., FNPRM, 29 FCC Rcd at 12153 ¶ 126 (discussing proposals to add the extended C- and Ku-bands and to include all GSO FSS frequency bands).

³¹ See 47 C.F.R. § 25.118.

³² See FNPRM, 29 FCC Rcd at 12159 ¶ 151.

station, even one that has been authorized to provide service to the U.S. already, would require FCC approval in most cases.³³

The additional oversight of satellite services operations introduces delay and stifles competition, investment and innovation. As discussed herein, reforming these types of detailed prior-approval requirements would accelerate investment and deployment in the satellite services sector.

2. Simplifying and Accelerating the Satellite Application Process

Space station applications (and, in some cases, earth station applications)³⁴ are complex, requiring the submission of detailed technical information often comprising more than a hundred pages of narrative and technical text.³⁵ The FCC application itself also requires the use of a specialized software program to generate a “Schedule S” form that must be included in each application for a new space station.³⁶

Moreover, the International Bureau essentially has adopted a “letter perfect” filing standard for both space and earth station applications and routinely dismisses applications for minor errors or omissions, frustrating even the most experienced satellite operators and unnecessarily delaying the processing of applications. Indeed, many of the mistakes forming the basis of a dismissal could be corrected readily and have no material bearing on the merits of the

³³ See 47 C.F.R. § 25.118(a)(5), (e).

³⁴ For example, an earth station application seeking to communicate with a foreign-licensed satellite that has not previously been authorized would be required to submit all relevant technical information for the satellite. See 47 C.F.R. § 25.137.

³⁵ See 47 C.F.R. § 25.114.

³⁶ Detailed information on the completion of the complex Schedule S form is provided on the FCC’s Website. See https://licensing.fcc.gov/prod/ib/forms/help/schedule_s_hot_topic.htm (last visited Jan. 29, 2015).

application.³⁷ Terrestrial applicants, on the other hand, are permitted to correct minor issues with their applications, and FCC staff will work with applicants to identify problems and remedy application defects or concerns.³⁸

The International Bureau's policy is all the more problematic because licensing of satellites is conducted on a first-come, first-served basis.³⁹ Thus, the dismissal of an application on a minor technicality can have a material business impact, potentially leading to disputes and requiring administrative adjudication.⁴⁰ Further, because of the inflexibility of the FCC's rules and the Schedule S software program, which was developed over a decade ago and last updated in 2006, satellite applicants must frequently request waivers of the satellite rules and the Schedule S form requirements, increasing application processing time. Indeed, EchoStar

³⁷ See, e.g., Letter from Jose P. Albuquerque, Chief, Satellite Division, International Bureau, FCC, to Daniel Mah, Regulatory Counsel, New Skies Satellites B.V., 28 FCC Rcd 12939 (IB 2013) ("Mah Letter") (dismissing application three months after its submission because the narrative application specified the satellite would operate in the 6425-6650 MHz band, but the Schedule S inconsistently indicated that the satellite would operate in the 6490-6650 MHz band); Letter from Paul Blais, Chief, Systems Analysis Branch, Satellite Division, International Bureau, FCC, to Norm Leventhal, Counsel to Televisa, SA de CV, 29 FCC Rcd 8380 (IB 2014) (dismissing earth station application three months after its submission because applicant miscalculated maximum EIRP density and specified inconsistent values for certain technical parameters in its application); Letter from Jose P. Albuquerque, Chief, Satellite Division, International Bureau, FCC, to William Wiltshire, Counsel to DirecTV, 29 FCC Rcd 10081 (IB 2014) (dismissing satellite application nearly three months after its submission for failure to include transponder and emissions data and isotropic antenna gain information in the Schedule S).

³⁸ See, e.g., *Auction of Advanced Wireless Service (AWS-3) Licenses, Status of Short-Form Applications to Participate in Auction 97*, Public Notice, 29 FCC Rcd 11606 (WTB 2014) (providing two-week period to amend incomplete or deficient applications). See also *infra* section V.H.

³⁹ See 47 C.F.R. § 25.155.

⁴⁰ See, e.g., *Mobile Satellite Ventures Subsidiary LLC*, Order and Authorization, 20 FCC Rcd 9752, 9755-56 ¶¶ 9-12 (IB 2005) (discussing the complex history of and resulting filings from an application that the International Bureau had initially dismissed, then reinstated, and eventually granted).

estimates that a typical satellite application takes more than three times longer (*i.e.*, 9-12 months) to grant than a typical wireless application (*i.e.*, 3 months).

The command-and-control approach to the satellite licensing process is neither effective nor efficient. A more streamlined approach that relies on applicant certifications as well as targeted enforcement for companies failing to abide by their certifications would remove barriers to investment, encourage novel system designs and service offerings, and help ensure more reliable and timely compliance with the rules necessary to ensure safe and interference-free operations.

3. *Rationalizing Standards and Goals between Satellite and Terrestrial Wireless Services*

Other rule provisions reflect major differences between the regulatory approaches adopted for satellite and wireless services. For example, under the wireless rules, an applicant may be granted special temporary authority (“STA”) if circumstances “fully justify and necessitate the grant of STA.”⁴¹ By contrast, the satellite rules specify that the “Commission may grant a temporary authorization only upon a finding that there are *extraordinary circumstances* requiring temporary operations in the public interest and that delay in the institution of these temporary operations would seriously prejudice the public interest.”⁴²

A number of examples are non-substantive, and the differences exist for no clear reason. These examples are apt metaphors for the inertia behind many of the Part 25 rules. For example, parties electronically submitting applications in the satellite services must retain a physical

⁴¹ 47 C.F.R. § 1.931(a)(1).

⁴² 47 C.F.R. § 25.120(b)(1) (emphasis added). A showing of “extraordinary circumstances” for a wireless STA is required only in those instances where there is no public notice of the application. 47 C.F.R. §1.931(a)(2).

signature page (47 C.F.R. § 25.110(e)), but there is no such requirement for the wireless services (47 C.F.R. § 1.917(d)).

As another example, the Part 27 terrestrial wireless rule provisions explain the Commission adopted rules to establish “the conditions under which spectrum is made available and licensed for the provision of wireless communications services.”⁴³ By comparison, the Part 25 satellite services rule provisions have no stated purpose and thus no unifying theme to guide staff interpretation when the rules seem ambiguous or unclear.⁴⁴ With little or no apparent interpretative guidance offered, the risk is that compliance with the satellite services rules – rather than the promotion of competition, investment, and innovation – becomes an end in itself.

While satellite technology is complex, just as wireless technology is complex, the rules governing satellite or wireless services do not have to be that way, and as discussed, the wireless rules do not have nearly the same complexity. Establishing similar standards and goals for satellite and wireless services across a variety of rule provisions represents a small part of a larger reform process that, taken together, promises to restore economic leadership in the satellite services sector to the United States and bring immense new benefits to the American public.

V. ADOPTION OF ECHOSTAR’S PROPOSALS WILL CREATE A MORE COMPETITIVE SATELLITE INDUSTRY AND ESTABLISH THE UNITED STATES AS A MORE ATTRACTIVE FILING ADMINISTRATION

EchoStar’s proposals in this section are consistent with the principles of technological neutrality, operational flexibility and regulatory certainty. Accordingly, as stated above, adopting the proposals will make the satellite industry more competitive and the United States will be established as a more attractive administration for satellite licensees and a more attractive

⁴³ 47 C.F.R. § 27.1.

⁴⁴ 47 C.F.R. § 25.101.

place for satellite operators to do business. Of equal importance, U.S. consumers will benefit from the availability of innovative, cost-effective satellite services.

A. ITU Filings for GSO Space Stations

EchoStar fully supports a procedure whereby GSO FSS operators can submit filings for space stations to the ITU before the satellite operator files a “corresponding license application with the Commission.”⁴⁵ Such a procedure will provide more flexibility by not requiring substantial preparation and allocation of resources at a stage where plans for new operations are often uncertain.

1. *The FCC Should Adopt its Proposed Two-Year Deadline for Application Filings*

Currently, the FCC submits an API filing or Coordination Request to the ITU only after an applicant has filed an FCC license application for the proposed space station, along with a certification of unconditional acceptance of cost recovery responsibility.⁴⁶ However, submission of the API does not guarantee priority status or successful coordination of the filing for at least two years. Accordingly, all the resources and planning required to prepare and file the FCC application may very well be wasted, thus deterring operators from seeking space station license from the United States.

Therefore, EchoStar supports the FCC’s proposal for a two-year deadline to submit “technical information needed to complete a satellite license application” after submitting the API through the FCC.⁴⁷ A two-year deadline is a reasonable amount of time for the satellite operator to analyze the priorities at the ITU to make an informed business decision as to whether

⁴⁵ FNPRM, 29 FCC Rcd at 12119 ¶ 5.

⁴⁶ *See id.* at 12119-20 ¶ 7.

⁴⁷ *Id.* at 12122 ¶ 14.

or not to submit the application for a full license and make the financial commitment to do so. This procedure will encourage operators to apply for U.S. licensed space stations because satellite operators will be able to file and obtain ITU priority for their proposed space station early in the licensing process, creating a more stable regulatory framework.

In addition, “the design and completion of a satellite network proposal is a complex undertaking that follows the identification of available orbital/spectrum resources.”⁴⁸ Accordingly, it is important to create a procedure that allows operators to start the ITU process prior to filing for authorization with the FCC.

Furthermore, EchoStar agrees that whichever applicant submits the ITU filing through the FCC first should be first in line for the orbital slot.⁴⁹ However, EchoStar supports a system where the filing of just an API with a simplified description of the satellite network and a cost-recovery declaration suffices to secure a position in a first-come, first-served space station application queue. Priority based on the submission only of the API provides satellite operators the greatest flexibility for plans and the ability to establish priority very early in the planning stages.

EchoStar further agrees that if the filer does not submit an application for a permanent authorization within two years from the filing of the API, the orbital slot should become available to the next applicant in the queue. The FCC also should clarify that the two-year window to submit a full application after submission of the API is not part of the five-year period to place the satellite into operation. In other words, the two-year period is in addition to the five-year milestone period. This total seven-year period is consistent with the ITU timeframe to bring a satellite system into use. Accordingly, as discussed above, the FCC should allow for ITU

⁴⁸ *See id.* at 12121 ¶ 10.

⁴⁹ *See id.* at 12122 ¶ 15.

filings through the United States prior to submission of a full license application, provide a two-year deadline after submission of the API to submit the full license application, and allow submission of just the API to secure a position in a first-come, first-served space station application queue.

2. *The FCC Lacks Legal Authority to Require a Surety Bond at the ITU Stage, and Such Requirement Will Discourage U.S. Applications*

EchoStar opposes the use of a surety bond at the ITU filing stage. First, imposing such a requirement would be contrary to the FCC's stated goal in this proceeding to encourage satellite operators to file through the United States to license space stations.⁵⁰ Even at the ITU stage, operators are unsure as to whether the slot will actually be available. With such uncertainty, requiring a bond or any financial commitment other than a simple filing fee at this stage will assuredly deter satellite operators from coming to the United States to file because operators will not want to take any financial risk at all when there is such a high level of uncertainty.

A bond requirement at the ITU filing stage it is also inconsistent with the FCC's jurisdictional authority. In a 2004 order on reconsideration, the FCC reviewed its authority to implement the bond requirement and found that it had legal authority under Section 308(b) of the Communications Act to do so as a license condition and financial qualification requirement.⁵¹ Section 308(b) of the Communications Act applies to an "application[] for a station license . . .", but an ITU filing, by itself, is not an application for a station license.⁵² Accordingly, imposing a

⁵⁰ See *id.* at Statement of Commissioner Pai.

⁵¹ *Amendment of the Commission's Space Station Licensing Rules and Policies*, First Order on Reconsideration and Fifth Report and Order, 19 FCC Rcd 12637, 12642-43 ¶ 12 (2004) ("2004 Bond Reconsideration Order").

⁵² Even assuming that the ITU filing is part of an application process, *i.e.* step one in part of a two-step filing process for an authorization, see FNPRM, 29 FCC Rcd 12122 ¶ 16, n.20, a pending application does not give an applicant any vested right *vis-à-vis* the Commission or the United States government for which the government to attach a bond to. See *Amendment of the*

bond at this stage would expand the FCC’s jurisdiction beyond what is allowed under the Communications Act.⁵³

Further, the FCC does not have jurisdiction to impose a bond under Section 303(l)(i) because this section does not apply in this situation.⁵⁴ At the ITU filing stage, the applicant is not a station operator. Furthermore, the Commission cannot rely on the justification it did in 2004 to find authority under Section 4(i) of the Communications Act. In 2004, the FCC reasoned that, “Section 4(i) empowers the Commission to adopt any and all rules, not inconsistent with the Act, as may be necessary in the execution of its functions. The bond requirement is necessary to ensure that satellite *licensees* are financially qualified, within the meaning of Section 308(b) of the Act.”⁵⁵ A bond requirement at the API stage is easily distinguishable. At the ITU filing stage, the entity requesting the filing is not a Commission licensee. Further, in its *2004 Bond Reconsideration Order*, the FCC reasoned that Section 303(r) permitted a bond requirement because the section allows the Commission to place conditions on licenses.⁵⁶ Section 303(r) does not provide justification because, as the FNPRM states, at the ITU stage, the satellite operator will not be obtaining a license. At this stage, all the satellite

Commission’s Space Station Licensing Rules & Policies, First Report and Order and Further Notice of Proposed Rulemaking in IB Docket No. 02-34, and First Report and Order in IB Docket No. 02-54, 18 FCC Rcd 10760, 10864 ¶ 277 (2003) (“*Space Station First Report and Order*”) (“Courts have explained that applicants do not gain any vested right merely by filing an application.”). See also *id.*, 10782 ¶ 46 (“The Commission has found in other proceedings that applicants do not have an automatic right to a license.”), and *c.f.* 47 C.F.R. § 73.3573(f) (rule for first-come, first-served in the broadcasting context, “[t]he priority rights of the lead applicant, *as against all other applicants*, are determined by the date of filing, but the filing date for subsequent applicants for that channel and community only reserves a place in the queue.”) (emphasis added).

⁵³ 47 U.S.C. § 308(b).

⁵⁴ *2004 Bond Reconsideration Order*, 19 FCC Rcd at 12643 ¶ 14.

⁵⁵ *Id.* at 12643-44 ¶ 14 (emphasis added).

⁵⁶ *Id.* at 12644 ¶ 15.

operator will have is the ability to file at the ITU to obtain a place in line for its space station.⁵⁷ Accordingly, the FCC does not have the legal authority to impose a bond requirement at the ITU filing stage and should not adopt proposed rule 25.165(f).

Of equal importance and contrary to an important goal in this proceeding, the use of a bond at this stage would discourage the use of the United States as a licensing administration. It does not appear that any other country in the world has such a requirement that penalizes a potential operator for failure to execute on such an early filing at the ITU, without providing an accompanying right – something more than a place in line for a satellite authorization. This is because, at this early stage of filing, there is a significant amount of uncertainty as to what rights the applicant will be able to obtain in the international process. Accordingly, the FCC should look at alternative methods to limit the potential for warehousing. One such way is to require an entity that files through the United States at this early stage to provide a report after the first year on its development process.

3. *The FCC Should Allow Flexibility on the Number of ITU Filings*

In order to provide more flexibility to licensees, the FCC should eliminate its three-strike rule because, as discussed below, it is not necessary.⁵⁸ Further, as discussed below, in the event the rule is retained, it should not apply to ITU filings. The FCC has failed to provide any evidence that the three-strike rule prevents spectrum warehousing, the main reason for its implementation. Instead, the three-strikes rule is a deterrent for potential applicants to file for space station authorizations in the United States because such potential applicants subjected to the rule are prohibited from filing for new authorizations when they have two or more satellite

⁵⁷ See *supra* n. 52.

⁵⁸ 47 C.F.R. § 25.159(d).

applications pending or two license-but-unbuilt systems.⁵⁹ With other protections against spectrum warehousing in place such as the bond requirement, the only impact of the three-strike rule is to direct satellite operators, who are subject to the rule, to other administrations to obtain space station authorizations. This result simply helps to grow the satellite industry in other countries, such as the United Kingdom, Papua New Guinea, and the Netherlands. Accordingly, the FCC should eliminate Section 25.159(d).

Additionally, extending the three-strike rule to ITU filings would be a mistake because of the uncertainty that exists at the ITU filing stage. As discussed earlier, at this stage, companies may not even know the ITU priority that their system would have under the ITU filing until years later. Accordingly, even if the FCC allows one ITU filing to be made for a system, facts may unfold in the ITU process that make pursuing that filing not viable because of ITU priority or coordination issues. In such cases, there would be no public interest rationale to impose such a severe penalty on the satellite operator. In fact, such a penalty only serves as a deterrence for the operator from filing for future satellite networks in the United States.

B. Milestones and Bonds

1. The FCC Should Revise its Milestone Approach

EchoStar supports the Commission's goal to streamline its satellite licensing milestones in order to provide greater regulatory certainty and to reduce administrative burdens. Adopting a streamlined milestone approach will encourage greater market entry for satellite services and space station licensing because the United States will be a more attractive administration for licensing satellites.

⁵⁹ *Id.*

In particular, the Commission should adopt its proposal to make all interim milestone requirements optional.⁶⁰ Under this options approach, the only milestone requirement would be the final milestone requiring the licensee to bring its satellite into operation. As the Commission states, eliminating the milestones “would reduce administrative burdens still further and eliminate any need for submission of confidential construction contracts or proprietary design packages.”⁶¹

In order to enable greater flexibility for satellite operators, EchoStar proposes that the FCC expand how an operator can meet the bringing into use milestone to allow an operator to bring any healthy satellite into use at the location -- not just construct and launch a new satellite. Such an approach will enable fleet operators to have greater flexibility to manage their fleets to best serve their customers. This is especially true as more and more satellites are being constructed in a non-purpose-built manner. Today, many satellites can be operated for different purposes and at different orbital locations. Accordingly, an approach that allows a satellite licensee to use an existing satellite to bring into use a slot should be expressly authorized. In order for the Commission to allow an existing satellite to move into the slot for which the operator is authorized, EchoStar proposes that at least one year prior to the bring into use milestone, the licensee should be allowed to submit an application to modify its license to reflect, if necessary, the technical parameters of the satellite. The one-year requirement would provide sufficient time to provide public notice of the planned use of the existing satellite and its technical parameters. For the reasons above, the Commission should adopt a new rule that

⁶⁰ See FNPRM, 29 FCC Rcd at 12128 ¶ 30. If the FCC sufficiently clarifies its interim milestones, EchoStar would not oppose an approach that allows an operator to select whether it wanted to comply with a series of interim milestones or a single milestone.

⁶¹ *Id.* at 12128 ¶ 30.

allows the licensee to bring any satellite into use at the orbital location for which it is authorized, whether it is an existing satellite or a newly constructed one.

2. *The FCC Should Eliminate the Critical Design Review Milestone*

At a minimum, even if the FCC keeps the current milestone structure, the Commission should eliminate the Critical Design Review (“CDR”) milestone. This milestone has imposed a huge administrative burden on both the licensee and the Commission without any identifiable benefits.

First, the CDR milestone unnecessarily has required the International Bureau staff to review volumes of technical data. Such a review places a strain on the Commission’s limited resources. In return, the CDR milestone adds very little to the goal of deterring warehousing of spectrum when taken in conjunction with other means to prevent warehousing, *i.e.* financial requirements and other milestones. In addition, the CDR milestone requires that the manufacturer and operator submit substantial highly sensitive and confidential materials. While EchoStar is unaware of any situation where such materials were inadvertently made public, eliminating the CDR would put an end to that risk. Further, providing this information to the FCC is unnecessarily burdensome on both the operator and manufacturer. Accordingly, the Commission should eliminate the CDR milestone entirely and delete Sections 25.164(a)(2) and 25.164(d) of the FCC’s rules.

3. *The FCC Should Clarify its Milestone Standards if it Retains Any Milestone Requirements*

For any interim milestones that remain in place, the Commission should streamline and clarify its standard for compliance with those milestones. Such standard should be straightforward, simple and streamlined. Specifically, licensees should be allowed to demonstrate compliance with any interim milestones by submitting a certification (from either

the licensee or the satellite manufacture) declaring compliance with a clear set of criteria. For example, if the FCC retains the contract milestone as either a requirement or an option, the licensee should be allowed to submit a certification stating that it has executed a binding satellite manufacturing contract that specifies a construction schedule consistent with any FCC milestone requirements. Additionally, if the FCC retains the commencement of construction milestone as either a requirement or an option, the licensee should be allowed to submit a manufacturer's certification that the manufacturer has commenced physical construction and has received payment for doing so.

Such a certification requirement streamlines compliance, reduces administrative burdens, and provides regulatory certainty to licensees. This is the type of procedure that is authorized in the terrestrial wireless context in order to demonstrate compliance with certain construction requirements.⁶² There does not appear to be a public interest rationale for requiring satellite operators to meet a more burdensome requirement.

4. *The FCC Should Not Increase the Bond Amounts*

To the extent that the FCC proposals support increasing the bond above current amounts, EchoStar opposes any such proposal.⁶³ Not increasing the bond amounts will create a stable regulatory environment. Subjecting the bond amounts to continual and potentially arbitrary increases would be unduly burdensome and deter the capital investments required to proceed with construction. Moreover, the bond amounts are not intended to recover any regulatory costs, and thus there is no need to consider adjustments to recover increasing costs. Accordingly, the Commission should not raise bond amounts.

⁶² For example, cellular and microwave licenses are permitted to demonstrate compliance with build-out requirements by submitting certification that simply provides the date of completion of construction. *See* 47 C.F.R. § 1.946(d).

⁶³ *See* FNPRM, 29 FCC Rcd at 12128 ¶ 31.

5. ***The FCC Should Adopt a Reverse Bond and Use of a Corporate Guarantee as an Alternative to the Current Bond Requirement***

If the Commission decides to keep a bond requirement in place, EchoStar supports the Commission's proposal for a reverse bond. With the reverse bond, the FCC asks whether it is better for a licensee to get more money back in the event that it gives up the license sooner. Specifically, the FCC asks whether the "amount to be paid in the event a licensee surrenders a space station authorization without placing the authorized facility into operation or is found in default of the deadline for commencing in-orbit operation will increase progressively, *pro rata*, in proportion to the time that has elapsed since the license was granted."⁶⁴

As the FCC notes, from a public policy perspective there are certain benefits "for a satellite licensee to surrender a license soon after receiving it than to surrender it after holding it for several years."⁶⁵ Specifically, in contrast to the current regime, under the FCC's proposal a licensee will have a financial incentive to surrender a license as early as it is apparent that it will not be utilized. Under the current bond requirement, the licensee is incentivized to attempt compliance with the next interim milestone requirement to lessen the financial burden of the bond even if the licensee may no longer have a viable business need to ultimately put the satellite into commercial operation. The financial incentives under the proposed reverse bond will incentivize licensees to give up the authorization sooner if business plans do not ultimately develop. When an unneeded authorization is surrendered sooner, the slot can be made available to an operator who will be able to put it into use.

The Commission's goal should be to have a system in place that ultimately places and keeps orbital slots in the hands of operators who will use them. The reverse bond is a way to

⁶⁴ *Id.* at 12129 ¶ 32.

⁶⁵ *Id.*

achieve that goal better than the current bond regime. Accordingly, the Commission should modify Section 25.165 of its rules to add a new subsection allowing for a reverse bond.

Nonetheless, as the Commission notes, the amount of the bond initially has to be “substantial enough to deter parties from filing applications for strategic motives with the intention of surrendering their licenses shortly after grant.”⁶⁶

EchoStar also proposes that in addition to the use of a surety bond, the FCC should allow licensees to elect to use a corporate guarantee as an alternative. The licensee should be able to choose between the bond requirement and a corporate guarantee if they meet certain financial qualifications. Using the corporate guarantee approach, a corporation, usually a parent corporation, would agree to be held accountable for the duties of the licensee. In the event that the licensee does not meet its milestone obligations, the corporate guarantee would be obligated to pay the amount owed. However, the FCC needs certain protections to ensure that a licensee is eligible to be able to utilize a corporate guarantee approach. Accordingly, EchoStar proposes that the FCC adopt the following criteria for a licensee to be able to utilize the corporate guarantee approach.

- The company must be solvent and not in bankruptcy
- The company files audited financials with the Security Exchange Commission
- The company has five times the amount that would be owed to the FCC in the event it misses the milestone(s) in reserve in unrestricted cash or cash equivalents
- The documentation of corporate guarantee would be submitted to the FCC and must have been passed by the board of directors or other governing body of the guarantee.

⁶⁶ *Id.*

Every year prior to bringing the satellite into use, the chief financial operator (or equivalent) would be required to make the above certifications to the FCC to keep utilizing the corporate guarantee approach. By meeting these criteria, the Commission would be assured that the same goals as the bond requirement would be met in a financially responsible manner.⁶⁷

A corporate guarantee provides an option that is in the public interest and meets the important goal of reducing unnecessary administrative burdens. Providing this alternative approach would reduce the costs that satellite licensees currently bare in fees to maintain bonds for their satellite licenses. By eliminating those fees, companies can use that money for other purposes, including investing in services to customers. Accordingly, the FCC should adopt a corporate guarantee as an option to the use instead of a surety bond as it will reduce unnecessary administrative burdens and free up capital for other more productive uses.

C. EchoStar Supports Keeping the Policy of Two-Degree Spacing

In the FNPRM, the Commission seeks comment on whether or not it should eliminate the current two-degree spacing policy.⁶⁸ EchoStar supports keeping the current two-degree spacing policy. As the Commission states the policy is still useful and eliminating it would not serve the public interest. The current policy eliminates the need for an “interference analysis, facilitates expeditious application processing and reduces cost and paperwork burdens for applicants

⁶⁷ A corporate guarantee is used in other contexts of the federal government. For instance, the Environmental Protection Agency (“EPA”) requires owners or operators of hazardous waste management facilities to have certain financial requirements for post-closure care. Under the EPA’s regulations, one of the ways that an owner or operator may meet this financial qualification is through a corporate guarantee. *See* 40 C.F.R. § 264.145.

⁶⁸ FNPRM, 29 FCC Rcd at 12132-33 ¶ 44.

willing to operate within the constraints of those criteria.”⁶⁹ For these reasons, EchoStar supports keeping the current policy with some minor changes discussed below.⁷⁰

First, EchoStar supports the FCC proposal to allow GSO FSS space station applicants to certify their operation and that of associated earth stations that comply with the FCC’s two-degree spacing rules, instead of submitting a broader interference analysis. Further, EchoStar agrees that the two-degree spacing rules could be improved by “establishing a more complete set of baseline power levels for common FSS bands and through possible refinements to the rules regarding future adjacent satellites.”⁷¹ EchoStar also supports the FCC revising its rules to allow operators to enter into coordination agreements that may not be in precise alignment with the two-degree policy.

D. First-Come, First-Served Licensing Procedure

The FCC should retain its first-come, first-served procedure because this process is still the best option to allocate orbital slots for GSO systems.⁷² Nonetheless, EchoStar suggests that the Commission implement procedures that will put potential applicants on better notice as to what orbital slots are available. First, the International Bureau should release regular public notices (*e.g.*, on a monthly basis) that have the specific purpose of alerting the public as to which slots are available as well as which slots are reserved for federal government use. FCC rules currently do not identify orbital slots that are reserved for federal government use, and only two

⁶⁹ *Id.*

⁷⁰ Further, EchoStar does not support providing any relief for operators who operate in a manner inconsistent with the two degree spacing policies. Such operations should be solely at that operator’s risk.

⁷¹ FNPRM, 29 FCC Rcd at 12132 ¶ 42

⁷² *See id.* at 12135 ¶ 53 (seeking comment on “whether modifications of the first-come-first-served procedure might be appropriate”).

public notices (one of which is not published in the FCC Record) provide that information.⁷³

Such limited information does not provide sufficient notice to prevent an operator from spending time, resources and money to develop a satellite application for an unavailable slot.

Accordingly, EchoStar supports maintaining the first-come, first-served rule, but the Commission should provide improved public notice identifying slots that are available and orbital locations and frequencies that are reserved for federal government use.

E. Codification of Replacement Satellite Policies

The FCC's should codify its satellite replacement policies.⁷⁴ It is critical that satellite operators have certainty when it comes to planning for the future, as replacement satellites are quite resource intensive to construct and launch. In fact, without such certainty, financing available to support replacement satellites could be placed at risk.

Further, EchoStar supports the codification of rules to support the launch of "emergency" replacement satellites.⁷⁵ As the Commission notes, it has "granted applications for timely launch of 'emergency' replacements for satellites that are lost due to launch mishaps or unexpected in-orbit failure without considering competing applications."⁷⁶ However, these are exceptions to the rules and not explicitly authorized.⁷⁷ Adopting rules that provide for the process for the emergency replacement of satellites will provide satellite operators and ultimately consumers with the greater certainty at times where things are most uncertain.

⁷³ See *Policy Branch Information Actions Taken*, Public Notice, 28 FCC Rcd 2553, 2554 (IB 2013), and *Ka-Band Licenses Surrendered; Current List of Orbital Locations not Available for Licensing in Portions of the Ka-Band*, Public Notice, Report No. SPB-208 (rel. July 23, 2004).

⁷⁴ FNPRM, 29 FCC Rcd 12135 ¶ 54.

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ *Id.*

Finally, EchoStar supports the FCC’s proposal “to replace the phrases ‘NGSO-like satellite system’ and ‘GSO-like satellite system’ in Sections 25.156, 25.157, and 25.158 with ‘NGSO-like satellite operation’ and ‘GSO-like satellite operation’.”⁷⁸ EchoStar agrees with the Commission that this change will better clarify the FCC’s rules, and it will also provide increased certainty to operators.

F. Earth Stations that Transmit to GSO FSS Satellites

1. Theta definition

In the FNPRM, the Commission identifies that two separate definitions of the angle theta are presently used in its rules. One of these two definitions uses the angle in respect to the direction of greatest emission from the earth station antenna as a reference in defining the angle theta. The other definition uses the line from the antenna’s focal point to the target satellite as a reference.⁷⁹ EchoStar supports a definition based on using the direction of greatest emission as a reference in defining the angle theta. A focal point assumes that the antenna makes use of a parabolic reflector which is not always the case. Antenna products that use phased arrays or other technologies would not be encompassed by a technology-specific definition relating to a focal point. As a consequence, the Commission should adopt the definition that is technologically agnostic.

2. Sidelobe and Backlobe allowances

In many cases, earth station antenna measurements show off-axis peaks called sidelobes, which exceed the level of the mask over a small angular range and have minimal impact on adjacent satellite interference. In the FNPRM, the Commission identifies the various different standards that have been defined through its rules which allow minor exceedances with the

⁷⁸ *Id.*

⁷⁹ *Id.* at 12137 ¶ 59.

performance requirements.⁸⁰ EchoStar supports having one single rule that defines the amount and angular range over which an exceedance can occur. Such a rule would provide a bright line in regards to the acceptability of either antenna gain or Effective Isotropic Radiated Power (“EIRP”) density measurements.

In its current rules, the Commission allows side lobes to be as much as 6 dB above the mask, and these higher sidelobes can be located anywhere from 7 to 180 degrees from the boresight of the antenna. But in fact, a sidelobe that is 6 dB higher will have a much greater impact if it is close to the main lobe than if it were farther away. The consequence of using a flat 6 dB amount at any angle means that the restriction on higher side lobes is unnecessarily restrictive for angles far removed from the main lobe.

Furthermore, the Commission allows these higher side lobes to cover up to 10% of the angular range, which stands to be an arc that could be as much as 18 degrees in width located close to the boresight. Having higher emission levels close to the boresight could lead to higher than expected interference levels.

Given these shortcomings in the Commission’s current rule, EchoStar proposes that the Commission consider instead dividing the angular arc into ranges and allowing different exceedance levels in each range. Furthermore, allowing the exceedance to only occur over 10% of smaller angular arcs prevents an exceedance in a large angular range in proximity to the antenna boresight. To that end, EchoStar proposes that the Commission make use of ITU-R Recommendation 732-1, which divides the angular arc into segments and allows various side lobe exceedance levels in each arc. The ITU-R has conducted studies relating to the acceptability of the exceedance amount and found that the levels now entrenched in the

⁸⁰ FNPRM, 29 FCC Rcd at 12138 ¶¶ 62-64.

recommendation have little chance of causing unacceptable interference to adjacent satellite networks. For these reasons, EchoStar proposes that the Commission replace the current practice of allowing side lobes to exceed by up to 6 dB with the values proscribed in ITU-R Recommendation S.732-1. This new exceedance level would pertain to the antenna gain mask in Section 25.209 as well as the off-axis EIRP density mask found in 25.138, 25.218, 25.221, 25.222, 25.223, 25.226, and 25.227 of the Commission's rules.

3. *EIRP Density Specifications for Cross-Polarized Signals*

In the FNPRM, the Commission asks “whether Section 25.218 should be amended to include separate EIRP density specifications for cross-polarized signals.”⁸¹ EchoStar is of the view that a specification for cross polarization on earth station antennas beyond 7 degrees is unnecessary. For angles greater than 7 degrees from the direction of maximum gain, the values of the co-polarization and cross-polarization signals become comparable due to the loss of cross polarization isolation. At these far angles, the impact is negligible and there is little need for an individual cross polarization gain specification. Accordingly, EchoStar does not support a change to Section 25.218 for the inclusion of off-axis EIRP density limits for angles beyond 7 degrees from the antenna boresight.

4. *Limits on Aggregate EIRP Density*

a. *Impact of Multiple Co-Frequency Transmitters on an Adjacent Satellite Receive Beam*

In 2005, the Commission provided earth station licensees with the flexibility to have multiple earth stations within the same satellite beam share the same frequency band.⁸² Since

⁸¹ *Id.* at 12138 ¶ 65.

⁸² See 2000 Biennial Regulatory Review -- Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network

each of the overlapping carriers is spread with a different spreading code, it is possible for the receiver to use the unique spreading code of a specific carrier to extract that carrier from the combined signal. This concept is referred to as “code division multiple access” and is used in a variety of satellite and terrestrial applications.⁸³

To ensure that the adjacent satellite interference from multiple overlapping carriers does not exceed the interference from a single compliant carrier, the Commission adopted the “minus 10 log N” rule.⁸⁴ This rule states that the maximum power that could be transmitted by a compliant carrier is divided evenly among N transmitters.⁸⁵ The net impact of N transmitters operating at 1/N of the power should result in no more interference than a single, compliant transmitter operating at the maximum permissible power.

While this rule addresses a specific case where all the stations transmit at the same power, it does not cover the more generic case where the power transmitted by the overlapping stations is not the same. A proposal for such a system was put forward by Boeing in the context of a system that would allow multiple aircraft to share spectrum.⁸⁶ The system divided the power unevenly among the different aircraft in flight. Given the varying aircraft attitude and location, the Boeing system dynamically tracked the interference from all aircraft and made sure

Earth Stations and Space Stations, Sixth Report and Order and Third Further Notice of Proposed Rulemaking, 20 FCC Rcd 5593, 5614-21 ¶¶ 51-70 (2005).

⁸³ *Id.* at 5614 ¶ 52.

⁸⁴ *Id.* at 5618 ¶ 63; *see also* 2000 Biennial Regulatory Review -- Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations, Eighth Report and Order and Order on Reconsideration, 23 FCC Rcd 15099, 15127, ¶ 66 (2008).

⁸⁵ FNPRM, 29 FCC Rcd at 12138-39 ¶ 66

⁸⁶ *Boeing Company Application for Blanket Authority to Operate Up to Eight Hundred Technically Identical Receive-Only Mobile Earth Stations Aboard Aircraft in the 11.7-12.2 GHz Frequency Bands*, Order and Authorization, 16 FCC Rcd 22645, 22649 ¶ 10 (IB/OET 2001) (“Boeing Company Order and Authorization”).

the aggregate impact met the Commission's limits.⁸⁷ To ensure that the aggregate interference tracking system did not underestimate the instantaneous interference, Boeing took on a voluntarily constraint of a 1 dB margin, which the Commission then imposed on ARINC's "Skylink" system.⁸⁸ The rules reflecting this type of operation have been called the "1 dB rule".

The 1 dB rules, which have allowed entities to operate Earth Station Aboard Aircraft ("ESAA"), Earth Station on Vessels ("ESV") and Vehicle Mounted Earth Stations ("VMES") appear in Sections 25.221, 25.222, 25.226 and 25.227 of the Commission's Rules.⁸⁹ In its comments to the Commission, SIA proposed that the 1 dB rule had general applicability and should also be applied to fixed earth stations.⁹⁰ At present, stations authorized under Sections 25.134, 25.138, or 25.218 can benefit from the more limited "minus 10 log N" rule but do not benefit from the more generic rule. SIA proposed to the Commission that all stations should benefit from the 1 dB rule.⁹¹ Doing so will not increase interference to adjacent satellite networks and promotes greater spectrum efficiency.

In the FNPRM, the Commission took the SIA proposal in a novel direction by suggesting that the interference be aggregated at the adjacent satellite from all co-frequency users in the

⁸⁷ *Id.* at 26654 ¶ 19. "Attitude" refers to rotation of the plane on the pitch, roll and yaw axis. Banking, diving, and climbing of the aircraft result in a change in how the aircraft antenna is oriented toward adjacent satellites.

⁸⁸ *ARINC Incorporated; Application for Blanket Authority for Operation of up to One Thousand Technically Identical Ku-Band Transmit/Receive Airborne Mobile Stations Aboard Aircraft Operating in the United States and Adjacent Waters*, Order and Authorization, 20 FCC Rcd 7553, 7558, 7573 ¶¶ 18, 58 (IB/OET 2005) ("ARINC Incorporated Order and Authorization").

⁸⁹ *See* 47 C.F.R. §§ 25.221, 25.222, 25.226 and 25.227.

⁹⁰ Comments of the Satellite Industry Association, IB Docket No. 12-267, at 43-45 (Jan. 14, 2013).

⁹¹ FNPRM, 29 FCC Rcd at 12140 ¶ 71.

victim receive beam of the adjacent satellite.⁹² This is significantly different from the present interpretation which only considers the impact of co-frequency/co-polarization carriers on the same receive beam of the satellite carrying the traffic (interfering beam).⁹³

EchoStar opposes this expanded interpretation of the “minus 10 log N” and 1 dB rules. The Commission’s proposed interpretation overlooks key technical facts that make the proposal unnecessary and, if adopted, would have adverse impacts across the entire satellite industry.

First, the Commission’s proposal fails to fully consider the impact of satellites that reuse frequencies through the use of multiple beams. The technology for the reuse of frequencies has been used for many decades in order to create regional beams in the C- and Ku-bands. More recently, MSS and Ka-band satellites that have high numbers of spot beams in order to re-use spectrum have been designed. These satellites with multiple beams can and have operated adjacent to other satellites without difficulty.⁹⁴

If the FCC adopts its proposal, satellite operators would be harmed by the limitation on the reuse of spectrum. Satellite operators cannot know *a priori* the size of beams that an adjacent satellite could use, and any satellite operators would have to assume that the adjacent satellite may make use of a global beam. Were such a system to be deployed, the adjacent satellite interference would need to be reduced to an extent that is impractical. For example, EchoStar XVII would need to reduce the power transmitted by each of over a million remote user terminals and seventeen gateway terminals by at least 15 dB, which is a factor of 70. There is

⁹² *Id.*

⁹³ *See id.*

⁹⁴ For a full discussion, *see* IB Docket No. 12-267, Comments of Satellite Industry Association, Section IV.E (filed Jan. 29, 2015).

simply no way that EchoStar can reduce the EIRP density transmitted by each of over a million user earth stations by a factor of 70 and still deploy a viable service.

The net impact of the proposed rule is simple: it would make it impossible for U.S. satellite operators to leverage frequency reuse through the use of multiple beams. Without frequency re-use to optimize satellite throughput, the cost per bit would rise to a point that satellite links would cease to be a cost effective solution and would deter U.S. satellite operators. Accordingly, the Commission should not adopt its proposal, which would aggregate the interference from multiple co-frequency transmitters operating in different beams on the intended satellite.

b. Combining the “1 dB rule” and the “minus 10 log N rules”

In the FNPRM, the Commission describes how multiple co-frequency earth stations that transmit on the same satellite receive beam can be operated either under the “minus 10 log N” rule if all the transmissions are of the same power⁹⁵ or vary the power among the earth stations operating on a co-frequency basis under the “1 dB rule.” While mobility applications can make use of this provision, terminals authorized under 25.138 or 25.212 do not benefit from this rule. EchoStar supports allowing co-frequency operation under the 1dB rule for all earth stations regardless of the provision under which it was authorized, although on a streamlined basis.⁹⁶

First, the Commission should consider capturing both rules in one single rule. The case of even power division among multiple earth stations is actually a subset of the case where the power can vary among multiple users. As such, the “minus 10 log N” rule could be folded into the more generic case.

⁹⁵ *Id.*

⁹⁶ See 47 C.F.R. §§ 25.138, 25.134 (To the extent that the Commission does not delete the relevant portion of 25.134 as requested in Section V.I.5.), 25.218, 25.211, 25.212, 25.220, 25.221, 25.222, 25.226, 25.227.

Second, the 1 dB margin included in the “1 dB rule” was formally adopted in 2012 to ensure that the airborne system proposed by Boeing would not cause interference to other satellite users.⁹⁷ However, over a decade of practical experience has shown that such systems operate successfully with other FSS systems.⁹⁸ Continuing to require the additional single dB of margin is not necessary. In addition, a single dB offers so little protection to other FSS users that its removal or continued use has next to no impact.⁹⁹ Based on the limited protection offered by 1 dB and the experience with CDMA systems, EchoStar proposes that the obligation for a single dB of margin be removed from the “1 dB rule.”

Finally, rather than repeating the same provision throughout sections of the FCC’s Rules, EchoStar proposes that the concept be iterated once only in the rule. Such a rule could be accommodated in Section 25.115, which has general applicability to all earth station licensing. Specifically, EchoStar proposes the following new rule:

25.115(j) Licensees operating multiple earth stations within the same receive beam of the satellite carrying the service that simultaneously overlap in frequency shall ensure that the aggregate adjacent GSO satellite interference is no greater than that caused by a single terminal compliant with two degree rules in the band it which it operates. This rule does not apply to simultaneous overlapping transmissions occurring while using contention protocols.

⁹⁷ See *Revisions to Parts 2 and 25 of the Commission’s Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands*, Notice of Proposed Rulemaking and Report and Order, 57 FCC Rcd 16510, 16542 ¶ 76 (2012).

⁹⁸ See, Boeing Company Order and Authorization, 16 FCC Rcd 22645, and ARINC Incorporated Order and Authorization, 20 FCC Rcd 7553.

⁹⁹ A 1 dB margin translates to a factor of 25%.

5. *Operation with Contention Protocols*

EchoStar supports the FCC's proposal that data transmission on communication channels using contention protocols be treated in a manner identical to a constant transmission stream.¹⁰⁰ In its comments to the Third FNPRM of the 2000 Biennial Review of Part 25, SIA provided technical evidence supporting that the average power of a channel where contention protocols are used is substantially less than a channel used at a constant power level.¹⁰¹ Based on this analysis, the Commission's proposal in the FNPRM to set N=1 for channels using contention protocols is well founded and should be adopted.¹⁰² As contention protocols are also used by terminals in motion, the Commission should extend the conclusions reached in this section to terminals authorized under Sections 25.221, 25.222, 25.226 and 25.227 of the FCC's rules.¹⁰³ The use of contention protocols by these terminals stands to actually reduce adjacent interference and should be adopted.

6. *Clarification of the Applicability of Section 25.218*

EchoStar supports the Commission's proposal "to amend Section 25.218 to explicitly state that an application for conventional C- or Ku-band VSAT stations not meeting the criteria in Section 25.134 can instead qualify for routine processing under EIRP density criteria in Section 25.218."¹⁰⁴ As the rules are currently written, there is confusion by the "fact that there are different (albeit not incompatible) routine licensing criteria in Section 25.134 that explicitly

¹⁰⁰ FNPRM, 29 FCC Rcd at 12141 ¶ 73.

¹⁰¹ See Comments of the Satellite Industry Association, IB Docket No. 00-248, at 29-42, Att. 1 (Sept. 6, 2005).

¹⁰² FNPRM, 29 FCC Rcd at 12141 ¶ 72.

¹⁰³ See 47 C.F.R. §§ 25.221, 25.222, 25.226 and 25.227.

¹⁰⁴ FNPRM, 29 FCC Rcd at 12145-46 ¶ 89.

apply to conventional C-band and conventional Ku-band VSAT applications.”¹⁰⁵ If the Commission amends Section 25.218, as proposed, it will clear up confusion and further streamline the FCC’s rule in Part 25. Accordingly, the FCC should adopt its proposed change to Section 25.218.

7. Reference Bandwidth Section 25.138

EchoStar supports the Commission’s proposal to standardize the reference bandwidth to those in use by the ITU and Commission generally.¹⁰⁶ Setting the reference bandwidth to 1 MHz for frequencies over 15 GHz will allow greater consistency through the Commission’s rules.¹⁰⁷ In addition, setting the reference bandwidth to 1 MHz allows beacons and other such carriers to avoid unnecessary coordination, which is triggered simply because the carrier power is averaged over too narrow a bandwidth.

On a related issue, the FCC should amend its rules to address an administrative issue with the application of this rule in the Form 312 Schedule B. Specifically, this form is based in its entirety on a 4 kHz reference bandwidth, regardless of the reference bandwidth specified in the rules. This inconsistency between Form 312 and the rules in some frequency bands leads to two issues. First, the difference in reference bandwidths can lead to transcription errors in moving from actual calculations based on the rules to the values entered on the form. Second, for small carriers, it is unclear which of the two reference bandwidths should be used in averaging the power. Therefore, the Commission should amend the current Schedule B form by allowing the applicant to enter the correct reference bandwidth.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at 12145-46 ¶ 90.

¹⁰⁷ 47 C.F.R. §§ 25.212, 25.218, 25.114(c)(4)(ii) (demonstrating that 1MHz is a standard use throughout Part 25).

8. *Off-Axis Gain Standards for FSS Earth Stations*

In considering the Commission's rules under Part 25, a number of articles serve both as specific technical constraints as well as operational obligations. In the case of technical constraints, the values presented are those that a laboratory facility can use to assess compliance of the equipment to a defined metric. Operational rules are obligations that the licensee operating a satellite network must meet while the network is in operation. Section 25.209 of the Commission's rules is one example where the operational and technical dimension of the rules conflict with resulting confusion. For example, the rule relates poorly to the work of measurement facilities. One example is the coordinate system used in Section 25.209 that ties to the GSO plane instead of those of the measurement test range. There is no way that an antenna manufacturer can know *a priori* how an operator will use the antenna and thus how to test it (*e.g.* what if the antenna were to be used for NGSO applications). The Commission should amend 25.209 so that it can be more readily used by measurement facilities as well as licensees who must certify technical compliance. Accordingly, EchoStar proposes that Section 25.209 be modified so that the specification applies to the plane where the beamwidth is the narrowest (the "main" plane) and the plane orthogonal to the "main" plane.

9. *Demonstrating Conformance with Limits on Off-axis Gain and EIRP Density*

EchoStar supports the Commission's proposal to harmonize the format to be used in submitting antenna and off-axis EIRP information to the Commission.¹⁰⁸ The Commission currently has different presentation rules in different bands that make the submission of data challenging to licensees and measurement organizations. As an example, C/Ku band antennas require detailed data plots up to 7 degrees from the boresight while Ka band antennas require

¹⁰⁸ See FNPRM, 29 FCC Rcd at 12148-50 ¶¶ 102-111.

detailed data up to 10 degrees.¹⁰⁹ These minor differences result in presentation format errors in the data submitted to the Commission, requiring additional effort on the part of the Commission staff and the applicant to rectify. Compliance with the current data presentation becomes even more challenging when a specific antenna is used in multiple frequency bands (*e.g.* C, Ku and Ka bands).

For this reason EchoStar supports the Commission's proposed presentation rules and their uniform application through its rules. The same presentation rules should apply to the submission of either off axis antenna gain measurements or off-axis EIRP densities, given the close relationship between these measurements.¹¹⁰

In the FNPRM, the Commission also solicits comments regarding the testing of antennas at various skew angles.¹¹¹ Many antennas are used at a skew angle other than zero. Since the degraded performance of the antenna at various skew angles could impact adjacent satellite operators, it is important that the Commission require the submission of antenna data across the operational range of skew angles at which the antenna will be used. Accordingly, EchoStar supports the inclusion of the rules in 25.132 and 25.138 requiring the submission of antenna data that takes into account the operations range of skew angles.

Furthermore, since many of the antenna models employed in these applications make use of phased array technology, these antennas consequentially do not have a focal point. In establishing rules relating to skew angles, the Commission should ensure that such rules are technologically neutral so that phased array systems are appropriately taken into account.

¹⁰⁹ *See, e.g.*, 25.132(b)(1)(i)(A) and 25.138(d)(1)(i)(A)

¹¹⁰ Consistent presentation rules for measurement data stand to speed Commission's staff search for the data they require and to reduce the dismissal of defective applications resulting from an incorrect data submission.

¹¹¹ FNPRM, 29 FCC Rcd at 12149 ¶ 106.

EchoStar would thus support a definition of skew angle that is based on the main lobe of the antenna instead of the focal point.

10. *Coordination Requirements for Non-conforming Earth Station Operations*

EchoStar supports the Commission's proposal to delete Section 25.220(d)(1)(i) since the initial paragraph already addresses protection for non-confirming operations.¹¹² EchoStar also supports the inclusion of the statement stating that the off-axis EIRP from a non-compliant earth station in the direction of any future satellite located within 6 degrees would need to be reduced unless coordination has been achieved.¹¹³

The Commission proposes additional changes in this section of the FNPRM relating to networks operating beyond six degrees that may be non-compliant beyond six degrees.¹¹⁴ EchoStar has experienced such cases where compliance was only seen beyond the six degree arc. While such cases are rare, it is important that the interference be taken into account. Accordingly, EchoStar supports these proposed changes.

EchoStar also supports allowing operators of non-compliant stations to forgo obtaining coordination agreements with those satellite operators having satellites within 6 degrees if the operations are compliant in the direction of the victim satellite. If adopted, this change will significantly simplify the process of obtaining an authorization by not requiring the operator to obtain coordination agreements with other operators when the performance is compliant with regard to their satellite.

¹¹² *Id.* at 12151 ¶ 114.

¹¹³ *Id.* at 12151 ¶ 115.

¹¹⁴ *Id.* at 12151-52 ¶ 116.

G. Section 25.103's Definitions

1. "20/30 GHz bands"

Currently, the term 20/30 GHz band, as defined in Section 25.103 of the FCC's rules includes the bands 18.3-20.2 GHz and 28.35-30.0 GHz.¹¹⁵ Rather than amending the definition to only include the bands in which the GSO operates on a primary basis, EchoStar urges the FCC to amend the definition to include the band 27.5-28.35 GHz. This change would ensure that all portions of the Ka band where GSO systems are deployed are addressed, regardless of the status of the GSO FSS in that band.

Such a change would ensure that two-degree spacing rules, as contained in Section 25.138, are also applied in all parts of the Ka band, including those where FSS GSO operators do not have primary status in the band. While these GSO networks must protect primary service in these bands, they must also protect each other from interference. Applying two-degree spacing rules across all of the Ka band will provide GSO users a homogeneous basis for sharing throughout the band. For this reason, EchoStar supports a more comprehensive definition of the term "20/30 GHz band" that would encompass all of Ka band.

2. "Permitted Space Station List"

EchoStar "urges the Commission to expand the definition of the Permitted Space Station List it proposes for Section 25.103 of the rules to encompass all foreign licensed GSO space stations authorized to serve the United States in the FSS services."¹¹⁶ This approach will "simplify processing of earth station applications and relieve service providers and the Commission from having to modify earth station licenses when GSO FSS satellites authorized to

¹¹⁵ See 47 C.F.R. § 25.103.

¹¹⁶ Comments of EchoStar Corporation, IB Docket No. 12-267, at 4-5 (Jan. 14, 2013).

communicate with U.S. earth stations in other bands are relocated or replaced.”¹¹⁷ In addition, this proposal will streamline the FCC’s rules reducing the regulatory burden on FCC staff. Accordingly, the FCC should include GSO space stations in the “extended” C- and Ku- bands on the Permitted Space Station List.

Additionally, the Permitted Space Station List should be broadened to include both U.S. and non-U.S.-licensed satellites authorized to serve the United States in the extended C-band (5825-5925 MHz, 6425-6725 MHz, and 3650-3700 MHz) and extended Ku-band (10.7-11.7 GHz, 12.75-13.25 GHz, and 13.75-14.0 GHz).¹¹⁸ The Commission already allows non-U.S.-licensed space stations to seek U.S. market access using a “Letter of Intent,” and it is a small step to include such space stations in an expanded Permitted Space Station List. This will create a more comprehensive (and therefore more useful) list of non-U.S.-licensed satellites authorized to serve the United States, without a loss of Commission ability to review individual earth station applications for compliance with band-specific rules.¹¹⁹

3. “Skew Angle”

EchoStar supports the FCC’s proposal to include a definition of skew angle in Section 25.132(b) of its rules.¹²⁰ Asymmetrical antennas require tracking on three axes in order to maintain correct alignment of the antenna with the target satellite. Since many antennas on platforms in motion can only track along two axes, there will be a corresponding “skew angle”

¹¹⁷ FNPRM, 29 FCC Rcd at 12153-54 ¶ 126.

¹¹⁸ Here, EchoStar reiterates its comments from GN Docket No. 14-25. *See* Comments of Satellite Operating Company & Hughes Network Systems, LLC, GN Docket No. 14-25, at 13-14 (filed Apr. 1, 2014).

¹¹⁹ Although the Commission declined to consider this issue in its recent Part 25 Report & Order, it stated that it was open to examining the issue in the future. *See Satellite Licensing Report and Order*, 28 FCC Rcd at 12410 ¶ 12.

¹²⁰ FNPRM, 29 FCC Rcd 12154 ¶ 129.

where the axis of the antenna with the smallest beamwidth does not align with the GSO arc. When antennas are operated over a range of “skew angles,” it is critical that such range be specified by the applicant and that the antenna be tested over the full range of “skew angles”. EchoStar consequentially supports the introduction of the definition proposed by the Commission as well as the corresponding provision in Section 25.132(b) of the rules.

4. “Two-Degree Compliant Space Station”

EchoStar supports the inclusion of a definition for “two degree compliant space station” in the FCC’s rules.¹²¹ The Commission should consider extending the application of the definition beyond its proposal to also apply to frequency bands where the FSS operates on a secondary or non-interference basis (“NIB”). FSS systems that operate on an equal basis, on a secondary or NIB bands must also share among themselves, and this definition should provide needed guidance.

5. “VSAT Network”

The Commission states that there is a need for a definition of VSATs.¹²² In its proposal, the Commission characterizes “VSAT networks” as having “remote” earth stations, “gateway” earth stations and routes traffic from one to the other.¹²³

EchoStar opposes the adoption of a “VSAT” definition because it is not necessary. As an application within the FSS, “VSAT” terminals abide by the same technical rules as other earth stations. Section 25.134 of the FCC’s rules specifically identifies “VSAT” operations in C- and Ku band, but no such rules pertain in regards to “VSAT” in the Ka band.¹²⁴ The absence of

¹²¹ *Id.* at 12154 ¶ 130.

¹²² *Id.* at 12154 ¶ 131.

¹²³ *Id.*

¹²⁴ *See* 47 C.F.R. § 25.134.

specific VSAT rules in Ka band are a clear indication that “VSAT” specific rules are not required.

More importantly, the definition of “VSAT” proposed by the FCC is problematic in that it does not encompass the full range of applications that are presently licensed and will seek to be licensed as “VSAT”. An example of this problem can be illustrated by considering the broadband services offered by Hughes through the SPACEWAY 3 satellite. This satellite has the capability of demodulating and routing traffic on the satellite and as a result there are no “gateways” or “remote” terminals. Any terminal, be it large or small, can communicate directly with any other terminal if it is authorized by the network manager to do so. Furthermore, the mesh network operating in conjunction with SPACEWAY 3 means that traffic can transit to and from the Internet at any authorized terminal. Since terminals transiting data to the Internet can be of any size, there is no true “gateway” serving as an access to the Internet. As a result of these network characteristics, the terminals operating in conjunction with SPACEWAY 3 would not be deemed to be “VSAT” when using the Commission’s proposed definition.

Other cases likely exist where the narrow technical definition put forward by the Commission stands to cause networks that should be licensed as “VSAT” to be excluded from the definition and thus not be able to benefit from blanket licensing.

As the Commission considers defining the term “VSAT,” it should take into account the efforts of ITU-R Working Party 4A on the matter. Faced with a similar problem, Working Party 4A did not produce a definition and settled instead on a listing of “VSAT” characteristics.¹²⁵ As a result, EchoStar does not support the Commission’s proposed definition of the term “VSAT”, nor does EchoStar believe that the term should be defined.

¹²⁵ ITU-R Report S.2778, Use of very small aperture terminals (VSATs).

A better approach is that the licensing of earth stations in all bands should be done on the basis of the type of license requested by the applicant instead of trying to define which technology is eligible for a type of license. Three license categories consisting of single antenna licenses, multiple antenna licenses or blanket licenses should meet the needs of applicants. The first license type is straightforward and is consistent with most licenses currently issued by the Commission.¹²⁶ In the case of a multiple individual antenna license, a licensee would be able to include any number of distinct antennas on this type of license as long as they all form part of a commonly controlled network. The third type of license would include both individual antennas and blanket-licensed antenna types, all of which form part of a common network. The advantage of this approach is that it would be immediately available in other new bands where small aperture antennas will be deployed (*e.g.*, the V band).

Accordingly, EchoStar opposes adding the definition of “VSAT” to the FCC’s rules, and instead proposes that Section 25.134 be deleted. Licensing of earth stations should be technologically neutral and be re-structured on the basis of three types of licenses consisting of: (1) licensing of an individual antenna at a given location; (2) licensing of multiple but distinct antennas; or (3) a comprehensive license, which can authorize multiple, individual antennas and multiple types of antennas deployed over a wide geographical area.

H. Rules Pertaining to Dismissal of Applications

EchoStar supports the FCC’s proposal to “eliminate the redundant text in Section 25.152 and move the non-redundant provisions in that section to Section 25.112, so that all rules pertaining to dismissal of Part 25 applications will be set forth in one place.” As the FNPRM

¹²⁶ The following call signs are examples of the many single antenna licenses issued: E940441, E8454, E950010 and E090178.

notes, this section of the rule is redundant.¹²⁷ In addition, licensees need to go to two different rules to address the same issue. Therefore, adoption of this proposal will further streamline the FCC's rules, eliminate unnecessary redundancy within Part 25 and make it so that applicants do not have to consult two different rule parts that cover the same issue.

EchoStar also supports amending the first sentence of 25.112(b) to include that duplicative space station applications are subject to dismissal under Section 25.112(a)(4). Adoption of this proposal will eliminate potential confusion because, currently, the rule does not address whether duplicative space station applications are subject to dismissal under Section 25.112(a)(4).¹²⁸ Furthermore, this change will avoid wasting limited FCC resources to consider two identical applications.

In addition, EchoStar also urges the FCC streamline its defective application rule.¹²⁹ Instead of rejecting a defective application, the Commission should amend Section 25.112(b) to add a new subsection that would allow the FCC to accept an application for filing if it deems that the defects in the application are not material to its ability to process the application or for the public to review it.¹³⁰ Accordingly, EchoStar proposes adding a new subsection as Section 25.112(b)(3) that states:

The Commission determines that the defect(s) in the application are not material to its ability to process the application or for the public to review the merits of the application.

¹²⁷ FNPRM, 29 FCC Rcd at 12155 ¶ 132.

¹²⁸ See 47 C.F.R. § 25.112(a)(4).

¹²⁹ See 47 C.F.R. § 25.112.

¹³⁰ In the context of wireless, in a cellular application or microwave application, as long as an application contains all of the information required, the FCC will accept the application for public notice.

This proposal is consistent with FCC action in other areas. For example, for cellular and common carrier fixed point-to-point microwave licenses, if the application has an error, the Commission still accepts the application for filing and subsequently allows the applicant to correct the error in sixty days.¹³¹ In order to streamline the rules, the Commission should provide the same treatment to satellite licensees. Accordingly, EchoStar urges the FCC to modify its rules so that applications filed under Part 25 are given sixty days to cure any defects.

I. Section 25.113 – Station Construction

The FCC should adopt its proposed elimination of the notification requirement found in Section 25.113(f), which requires notification of pre-grant spacecraft construction.¹³² As the FCC notes, a permit is not required to commence pre-grant space construction and thus, requiring notice is unnecessarily burdensome.¹³³ It is well-established that pre-approval construction is at the operators own risk. Notice serves no purpose. Accordingly, the elimination of the notification requirement will not affect the application process.

J. Section 25.114 – Applications for Space Station Authorizations

EchoStar supports the FCC proposal to suppress the first sentence of Section 25.114(b) as extraneous.¹³⁴ The specific material sought by the Commission in the submission of a complete proposal makes it clear that the application is a “comprehensive proposal.”

In this section the Commission also proposes to replace the words ““expected to serve”” by ““proposed to cover”” in reference to the coverage with steerable beams.¹³⁵ EchoStar

¹³¹ See, e.g., ULS File No. 0006434436 (accepted for filing on Aug. 27, 2014 and returned on Nov. 1, 2014 to allow the applicant sixty days to correct the county where the transmitted is located); and ULS File No. 0006430834 (accepted for filing on Aug. 27, 2014 and returned on Nov. 4, 2014 to allow the applicant sixty days to re-upload an exhibit). See also *supra* n. 38.

¹³² See 47 C.F.R. § 25.113(f).

¹³³ FNPRM, 29 FCC Rcd at 12155 ¶ 134.

¹³⁴ *Id.* at 12155-56 ¶ 136.

supports this change. As the Commission states, satellite operators may need to adjust coverage following the submission of the license application.¹³⁶

In Section 25.114 of the rules, the Commission proposes to remove the requirement for the submission of polarization information.¹³⁷ EchoStar supports this consequential change to the removal of polarization isolation requirements for space stations. The deletion of Section 25.210(i)(1) as proposed by the Commission in this FNPRM makes the submission of polarization information superfluous.¹³⁸

K. Section 25.115 – Applications for Earth Station Authorizations

The Commission should adopt its proposal to allow the use of the Form 312EZ and the auto-grant procedures for all applications eligible for routine processing.¹³⁹ Adoption of this proposal will serve as an important mechanism to accelerate action on routine earth station applications. Once the public notice period on an application closes, action is frequently delayed while the FCC proceeds with the data entry and formal issuance of a grant. While these are necessary administrative tasks, there is no need for the licensee to wait for their completion in order to proceed with the requested changes in advance of the formal grant. Accordingly, the Commission should expand use of the Form 312EZ as proposed.

L. Section 25.117 – Modification of a Station License

EchoStar supports the application of the auto grant process for either satellite relocations of up to 0.15 degrees or boresight changes of up to 0.3 degrees provided that the satellite

¹³⁵ *Id.* at 12156 ¶ 137.

¹³⁶ *Id.*

¹³⁷ *Id.* at 12156 ¶ 138.

¹³⁸ *Id.* at 12168 ¶ 181.

¹³⁹ FNPRM, 29 FCC Rcd at 12156-57 ¶ 141.

operator demonstrates that this will not cause harmful interference to other operators.¹⁴⁰ As long as the satellite is moved to a new location where the orbital location is not shared with another operator, there is no reason for the Commission to require the submission of a complete license modification. Similarly, minor changes in the pointing of the satellite do not require the work load required in the submission and processing of a full modification because they do not raise the potential for interference. Accordingly, as long as it is demonstrated such changes will not cause harmful interference to other operators, such a filing should be subject to auto-grant.

M. Section 25.118 - Modifications Not Requiring Prior Approval

1. Earth Station Modifications

EchoStar supports expanding the list of license changes not requiring prior authorization by means of modification. The number of remote terminals is one clear example of where a full license modification should not be required because the maximum number of remote terminals has no determination of the impact on adjacent networks and the consequential change to a license. Accordingly, FCC staff and licensees should not be burdened by the submission and processing of a completed Form 312 for such minor changes.

EchoStar opposes the deletion of 25.118(a)(2) and the addition of frequency, polarization, antenna height, antenna repointing and remote control point to the list under 25.118(a)(1). The addition of frequencies in bands where the FSS operates on an exclusive and primary basis impacts no other service and should thus be allowed under Section 25.118. As an example, the inclusion of additional parts of the 14.0-14.5 or the band 28.35-28.6, 29.25-30.0 GHz should be available to FSS earth station operators with minimal review by the Commission. Also, the repointing of an earth station to other satellites that are on the permitted list and in bands where

¹⁴⁰ *Id.* at 12157 ¶ 144.

coordination is not required should be kept as simple as possible. The antenna height, as long as it remains within the limits prescribed by the Federal Aviation Administration, should continue to be authorized under Section 25.118 as the impact of such changes would be minor. In a similar manner, there is no reason to require a full license modification for a change in the remote control point of a license. While it is critical that the Commission be kept abreast of how and where a network is controlled, providing that information to the Commission is not controversial and should not require a complete license modification. The submission of a letter to the Commission containing the pertinent details should suffice in notifying that a change in the control point has occurred.

EchoStar supports allowing earth station operators to communicate with replacement satellites. Satellite operators with large fleets frequently relocate satellites, which then obligates licensees authorized under Section 25.220 to be granted a license modification before being able to continue operating on the new satellite. In most cases, the earth station operator will see no change in its network as a result of the satellite change. A requirement to file and await a grant before using the new satellite creates unnecessary administrative burdens. Therefore, EchoStar proposes that a simple letter to the Commission identifying the license call sign and those points of communication that require correction is sufficient to effect this minor change.

The Commission should also simplify the administrative processes of requesting the minor changes covered under Section 25.118.¹⁴¹ At present, modification applications under Section 25.118 require the preparation and submission of a complete Form 312, even though the actual change to the license may be slight, possibly a single field. In order to simplify the preparation process and encourage the use of Section 25.118, the Commission should allow

¹⁴¹ 47 C.F.R. § 25.118.

modifications to be submitted using a simple letter to the Commission. Allowing the submission of a simple modification under Section 25.118 using a brief letter serves the public interest by significantly reducing the paperwork that must be submitted by applicants and that must then be processed by the Commission. A simple letter submission that clearly identifies the proposed changes, should be sufficient for Commission staff to amend the appropriate data fields and re-issue the license.¹⁴²

2. Fleet Management Rule

The FCC should adopt its proposal to amend the fleet management rule to enable licensees to slightly offset co-located space stations to facilitate safe station-keeping.¹⁴³ EchoStar agrees with the FCC's proposal to include relocations +/- 0.15 degrees of another orbit location assigned to the same licensee.¹⁴⁴ It is reasonable to require a safe flight profile certification as a prerequisite for a fleet management maneuver. This change will provide operators with increased flexibility, while ensuring against the potential for harmful interference. Imposing any additional obligations would simply impose unnecessary regulatory burdens on satellite operators.

EchoStar also supports the proposed changes to Sections 25.118(e).¹⁴⁵ These changes will provide satellite operators with needed flexibility to move satellites to new locations. Such changes will enable operators to have the necessary flexibility to manage their fleets to obtain optimization of their assets and provide services to consumers on an efficient and timely basis.

¹⁴² Ideally, myIBFS should be modernized in order to allow operators to view active licenses, amend the parameters online, submit the changes, and receive immediate confirmation of approval when the parameters being changed do not require human intervention.

¹⁴³ FNPRM, 29 FCC Rcd at 12159-60 ¶ 151.

¹⁴⁴ *Id.* at 12160 ¶ 153.

¹⁴⁵ *Id.* at 12160-61 ¶¶ 153-56.

N. Assignment or Transfer of Control

EchoStar supports the Commission's efforts to streamline Section 25.119 in order to make it more predictable for companies to conduct internal corporate reorganizations.¹⁴⁶ Specifically, the Commission should adopt its proposal to exercise its Section 10 forbearance authority to eliminate the prior approval requirement for *pro forma* assignments and transfers of control of common carrier space and earth station authorizations. Additionally, the Commission should streamline the review process for *pro forma* assignments and transfers of control of non-common carrier space and earth station licenses not subject to forbearance by, for example, allowing such applications to be deemed granted one day after their filing and issuing a public notice of the grant.

EchoStar holds numerous space and earth station licenses on a non-common carrier basis, and understands that the Commission's Section 10 forbearance authority may not extend to non-common carrier license assignments and transfers of control subject to Section 310(d)'s prior approval requirement. As a result, before a licensee may consummate an internal corporate restructuring, it must wait for the Commission to affirmatively consent to the transaction. This waiting period leads to uncertainty when timing is often critical for an internal restructuring to meet its intended purpose.

In order to make the processing and granting of *pro forma* transfer of control or assignment applications more predictable, the Commission should deem the application granted on the day after its filing and issue a public notice announcing grant of the application. Under those circumstances, companies will have increased certainty as to when they will be able to consummate internal reorganizations. Such a change is also in the public interest because the

¹⁴⁶ 47 C.F.R. § 25.119; FNPRM, 29 FCC Rcd at 12161 ¶ 157.

Commission will not have to use its limited resources towards reviewing *pro forma* assignment and transfer of control applications, and it will enable companies to have increased regulatory certainty.¹⁴⁷ Therefore, there are no public interest concerns in deeming a *pro forma* application granted. Accordingly, the Commission should adopt a rule that applications under Part 25 seeking consent to assign or transfer non-common carrier space station or earth stations authorizations be deemed granted one day after their filing.

O. Filing Requirements for Transmitting Earth Stations

The Commission should clarify Section 25.130 to allow licensees who have a network of multiple antennas under common network control to place these antennas under a single license.¹⁴⁸ Having separate licenses for individual gateways causes significant and unnecessary administrative burdens on the operator and the FCC without any discernable public interest benefit. Accordingly, EchoStar supports the proposed changes to Section 25.130(g).¹⁴⁹

P. Filing Requirements and Registration for Receive-Only Earth Stations

EchoStar supports amending Section 25.131(j) to allow unlicensed receive-only earth stations to receive signals from any non-U.S.-licensed space station that either has been approved for U.S. market access under Section 25.137 or is included on the Permitted List.¹⁵⁰ However, the Commission should go a step further and revise the rule to allow unlicensed receive-only earth stations to receive signals from any non-U.S.-licensed space station, regardless of whether

¹⁴⁷ Furthermore, the Commission has already stated that, “where no substantial change of control will result from the transfer or assignment, grant of the application is deemed presumptively in the public interest.” *Federal Communications Bar Association’s Petition for Forbearance from Section 310(d) of the Communications Act Regarding Non-Substantial Assignments of Wireless Licenses & Transfers of Control Involving Telecomms. Carriers*, Memorandum Opinion and Order, 13 FCC Rcd 6293, 6295 ¶ 2 (1998).

¹⁴⁸ FNPRM, 29 FCC Rcd at 12163 ¶ 163.

¹⁴⁹ *Id.* at 12163 ¶ 163.

¹⁵⁰ *Id.* at 12163 ¶ 164.

the space station has been approved for U.S. market access or is included on the Permitted List. As the FNPRM notes, neither the Communications Act nor any FCC rule requires receive-only earth stations to be licensed to receive signals from U.S.-licensed space stations.¹⁵¹ Accordingly, the FCC's licensing requirement for receive-only earth stations communicating with non-U.S.-licensed space stations imposes an unfair and discriminatory burden that is not imposed on receive-only earth stations communicating with U.S.-licensed space stations.¹⁵²

Q. Period of Construction and Commencement of Operation

The Commission should adopt its proposal to revise Section 25.133(b)(2) to state that operation of a network of earth stations at unspecified locations under an initial blanket license must commence within 12 months.¹⁵³ This rule also should be revised to include additional guidance by indicating that as long as one unit of any one antenna type has been enabled, the certification of bringing into use can be completed. Licensees may have a blanket authorization, with some antenna types being authorized, but infrequently deployed. Having one single antenna of a given type brought into use for the simple purpose of submitting a completion of construction does not serve the Commission's purpose of ensuring that authorized spectrum is

¹⁵¹ See *id.* at 12163 ¶ 164.

¹⁵² As an alternative to amending Section 25.131(j), the Commission should consider repealing it in its entirety. The Commission initially adopted (and later relaxed) this licensing requirement in order to maintain jurisdiction over the non-U.S.-licensed space station's operations in the United States, but the statutory basis for this assertion of jurisdiction has never been clear. See *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, Report and Order, 12 FCC Rcd 24094, 24179-80 ¶ 201 (1997); *Amendment of the Commission's Space Station Licensing Rules and Policies*, Second Report and Order, 18 FCC Rcd 12507, 12516-17 ¶¶ 20-22 (2003). In the absence of any statutory basis for FCC jurisdiction over either non-U.S.-licensed space stations or receive-only earth stations communicating with non-U.S.-licensed space stations, the Commission lacks authority to impose any licensing requirements on such receive-only earth stations.

¹⁵³ FNPRM, 29 FCC Rcd at 12164 ¶ 168.

used. As long as one or some of the antenna types authorized in a blanket license are in operation, the spectrum authorized is in use. In summary, the Commission should allow a construction certificate to be provided once any antenna of any type is brought into use.

Additionally, the Commission should reconsider its proposal and retain the 2 dB specification currently included in Section 25.133(b)(1)(v) provided the operator meet the transmit off-axis requirements as set forth in 25.218. For earth station operators to certify that an antenna as built complies with the antenna gain values in Section 25.209, it is necessary to conduct onsite measurement for large antennas. Such measurements are typically done using an available satellite and may suffer technical constraints based upon the local operational environment (*e.g.* limited noise floor). As a result, such tests can never have the same precision as those done by the antenna manufacturer on a calibrated antenna test range. EchoStar considers the 2 dB error margin as a clear, objective standard that allows the review of measurement data for compliance with Section 25.209 while taking into account measurement limitations. In that context, the bright line provided by the current rule is needed in assisting both licensees and, if necessary, FCC staff in assessing antenna data in the presence of increased measurement error.

While such a technical rule is needed to provide a guide as to an acceptable error, it also needs to be made clear that the operational requirement to meet the off-axis EIRP mask in 25.218 remains. Licensees are expected to comply with the applicable off-axis EIRP mask, regardless of an acceptable error margin that is taken into account as part of the licensing process.

In the FNPRM, the Commission also proposes to clarify that in the case of blanket licensing, each type of blanket licensed antenna has to be tested.¹⁵⁴ EchoStar supports this proposal as systems deployed using blanket licenses may deploy hundreds of thousands of identical remote antennas. It is unreasonable and imposes unnecessary burdens to expect or require licensees to test every antenna individually. As proposed by the Commission, confirming that each *type* of antenna has been tested is sufficient in ensuring that the network is operating in compliance with its authorization.

R. Other Proposed Changes in Section 25.138

The Commission should adopt its proposal to remove the reporting requirements with regards to the number of terminals in operation at the time of a license renewal.¹⁵⁵ This obligation does not exist with other bands and is unduly burdensome. Elimination of this rule would reduce regulatory burdens on operators.

The Commission also should dispense with the submission of antenna gain patterns in receive frequency bands. This material is not required for the processing of the license application. Accordingly, its submission represents unnecessary administrative burdens. Therefore, in order to reduce unnecessary regulatory burdens, EchoStar supports the elimination of this requirement.

S. Service-Specific Space Station Licensing Rules – 20/30 GHz

The Commission should adopt its proposal to remove the reporting requirements identified in Section 25.145.¹⁵⁶ The reporting requirements in the 20/30 GHz band do not exist

¹⁵⁴ *Id.* at 12164 ¶ 167.

¹⁵⁵ *Id.* at 12165 ¶ 171.

¹⁵⁶ *Id.* at 12165 ¶ 174.

for other bands, and there is no requirement for the report.¹⁵⁷ Since no requirement exists for the data provided in the report, the requirement for its submission should be removed.

The Commission also should make an editorial change to improve clarity. As most of the remaining items in this section pertain to NGSO systems, EchoStar suggests that the section be re-titled to “Licensing provision for the NGSO FSS in the 20/30 GHz band” so as to reflect this fact and that sub section (e) be moved to another section. As to subsection (g), the relocation of terrestrial services has occurred with regard to the bands 18.3-19.3 GHz and there should no longer be a need for this item.

T. Consideration of Applications

The FCC should eliminate Section 25.156(b) as redundant.¹⁵⁸ Recourse under Sections 1.106 and 1.115 is the same as under Section 25.156(b), and thus eliminating Section 25.156(b) will help streamline the Part 25 rules.

U. Limits on Unbuilt Space Stations

The FCC should eliminate Section 25.159(a), which artificially and unnecessarily constrain an operator’s options by limiting its ability to pursue substantial fleet upgrades or expansions on a simultaneous or near simultaneous basis with the business and financial certainty that comes from holding Commission authorizations. The size of satellite fleets today and the long lead times for satellite procurement activities means that even a limit of five applications in a particular frequency band can materially hinder an operator. Failure to provide flexibility to operators in this regard, forces operators to license their satellites in other countries.

The cost to operators—and by extension to U.S. consumers—of this limitation outweighs its marginal benefit to deterring speculation.¹⁵⁹ The Commission’s interest in preventing

¹⁵⁷ *Id.* at 12165-66 ¶ 174.

¹⁵⁸ *Id.* at 12168 ¶ 182.

speculation is served by a bond, or any alternative thereto, and the milestone requirements. These protections, taken all together, restrain unwarranted speculation without negatively impacting licensees by artificially constraining operators and undermining the certainty that U.S. fleet operators need to plan for and seek financing for future satellites. Accordingly, the Commission should eliminate Section 25.159(a)'s limitation on the number of unbuilt space stations.

V. Section 25.202 – Frequencies, Frequency Tolerance, and Emission Limits

The FCC should adopt the proposal to allow Telemetry, Tracking and Command (“TT&C”) operations anywhere in the assigned band when the off-axis EIRP density of such transmissions is consistent with two-degree spacing rules for that band.¹⁶⁰ The design of many new satellites makes use of multiple high gain antenna beams in order to make effective use of spectrum. The design of the satellite’s communication package often results in a frequency plan where the beam that is oriented toward the TT&C earth station facility uses a subset of frequencies that do not always include the band edge. While the high gain antenna on the satellite could successfully receive a TT&C signal at a frequency other than the band edge, the current rules prevent such use. To comply with the rules, satellite operators must look to either relocating the TT&C earth stations, adjusting the design of the entire communication system so that the beams with the TT&C earth station happen to be on the band edge or implement hardware changes so that the beam carrying the TT&C signal can also accommodate the band edge carrier. These changes result in unnecessary additional cost and complexity because there is no harm by in band TT&C if the off-axis EIRP density levels are consistent with two-degree spacing rules.

¹⁵⁹ See *Space Station First Report and Order*, 18 FCC Rcd at 10846-49 ¶¶ 228-33.

¹⁶⁰ FNPRM, 29 FCC Rcd at 12169 ¶ 186.

While the changes proposed would allow for greater flexibility for TT&C operations when the satellite is on station, there would still be a separate need for one or more separate TT&C frequencies which are on band edge. These frequencies must necessarily be connected to the omnidirectional antennas on the satellite as it is through this antenna that in-orbit transfers, in-orbit testing and emergency commanding are conducted. Since these operations are done at higher power levels, they should continue to occur at the band edge, as has been the practice to date. Accordingly, the FCC should adopt its proposal to allow TT&C operations anywhere in the assigned band when the EIRP of such transmissions are at power levels consistent with those of the traffic being carried by the satellite.

W. Earth Station Operating Rules

1. Power Limits

The FCC should remove the coordination obligation imposed in Section 25.204(e)(1) of the rules.¹⁶¹ There is an inconsistency between different parts of the rules, which require coordination in some cases but not in others. As the uplink power control (“UPC”) systems have operated without issue in bands governed by 25.138, there is no reason to impose additional constraints in other bands. EchoStar supports a consistent application of the rules for UPC through all satellite bands and that the rules reflect the reliability of such systems.

2. Sharing GSO and NGSO MSS Feeder Links

In revising Section 25.258, the Commission should remove the clause “or planned.”¹⁶² Taking into account “planned” gateways is problematic. First, there is no formal mechanism by which information concerning “planned” gateways is made public. Without such formal notice of “planned” gateways, the GSO operators have no clear mechanism for obtaining a definitive

¹⁶¹ *Id.* at 12170-71 ¶ 191.

¹⁶² *Id.* at 12172 ¶ 198.

list of planned gateway sites. Approaching the NGSO operator directly is at present the only option, but such an approach forces the GSO to reveal its business plan, and even so, there is no guarantee that the planned gateway locations may not be changed. The second and more important concern is there is no oversight by the Commission of those sites that are deemed as “planned,” which could lead to spectrum warehousing by NGSO operators through a unilateral use of “planned” sites. For these reasons, the Commission should establish an equal balance in the band by only obligating that the characteristics of licensed GSO and NGSO stations to be taken into account.

X. End-of-life Disposal

The Commission should adopt its proposed amendment to allow alternatives to the complete venting of propellant tanks of a satellite at the end of its useful life.¹⁶³ In designing a satellite bus, satellite manufacturers should be given the utmost flexibility in designing a satellite that maximizes robustness and safety. In this circumstance, the FCC’s current rules require the depressurization of propellant tanks, which reduces the risk of deflagration from a pressurized tank.¹⁶⁴ However, this is done at the expense of increasing other risks. Specifically, the depressurization of the tank requires the installation of a valve or some other mechanism for venting any residual pressure. The addition of any mechanism adds to the risk that a mechanical or electrical failure could cause an accidental depressurization during the mission. The addition of a venting mechanism also increases the risk that human error or malicious intent could result in a venting command to be sent to the satellite resulting in a catastrophic loss of propellant.

Since both deflagration and venting each carry very real risks to the satellite, both need to be carefully reviewed and balanced in the satellite design. The satellite manufacturers, in

¹⁶³ *Id.* at 12172-73 ¶ 199.

¹⁶⁴ 47 C.F.R. § 25.283(c).

collaboration with their customers, are in the best position to balance these two risks in order to minimize the possible impact to all users of the geostationary arc. Furthermore, the FCC should work with space station manufacturers to encourage them to meet the venting measures.

VI. CONCLUSION

EchoStar fully supports that the FCC's continuing efforts to streamline and reform the FCC licensing process and its operational rules to provide satellite operators greater operational flexibility and reducing administrative barriers. EchoStar, as discussed herein, urges the FCC to move forward immediately with many important changes that will ensure that the U.S. satellite industry is able to provide U.S. consumers with the most innovative and cost-effective services on a timely basis and to ensure that the U.S. satellite industry is the world's leader.

Respectfully Submitted,

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