

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

| | | |
|--|---|----------------------|
| In the Matter of |) | |
| |) | |
| Expediting Initial Processing of Satellite and Earth Station Applications |) | IB Docket No. 22-411 |
| |) | |
| Space Innovation |) | IB Docket No. 22-271 |

Comments of TechFreedom

James E. Dunstan
General Counsel
[TechFreedom](https://www.techfreedom.org)
jdunstan@techfreedom.org
1500 K St., NW
Floor 2
Washington, DC 20005

March 3, 2023

Summary

We are in a new space race. Today the race is among firms in the commercial sector, and yet its outcome will be determined by the legal system that prevails in space, and who writes those rules. Unfortunately, the FCC brings to this new space race a regulatory regime that is analog, antiquated, and antithetical to frictionless regulation, which currently is driving many companies to seek licenses from other countries. One key goal of American satellite licensing should be to establish the United States—and its regulatory regime—as the preferred place to pursue commercial space development. Cooperation with industry is essential; to that end, the application process and its associated paperwork should be simplified. Basic revamping of FCC forms is needed to reduce staff processing times. Earth stations should be licensed in such a way that modifications common to a network of earth stations can be done on a single form. The Commission should strictly interpret the filing deadlines in the informal complaint process to require complainants to fully define their problems in a timely manner, and not allow competitors to sandbag the system with late, redundant, or ill-founded engineering studies.

The U.S. system should not treat domestic applications and petitions for market access differently, and in no way should foreign entities be given preferential treatment. Additionally, applications seeking a waiver of the existing (and outdated) table of allotments should by all means be entertained. The proposal to implement “shot clocks” for applications should be expanded to cover all of them, and the policy on unbuilt systems should be scrapped.

Table of Contents

| | | |
|------|---|----|
| I. | About TechFreedom | 1 |
| II. | The New Space Race Needs a Twenty-First Century Licensing Regime | 2 |
| | A. This Race Is in the Commercial Sector, but Governments Play a Key Role..... | 2 |
| | B. The FCC’s Regulatory System Is Antiquated, Analog, and Antithetical to the Concept of a Frictionless Regulatory System | 3 |
| | C. The FCC Should Convene Industry Workshops to Overhaul Its Licensing Regime | 5 |
| | D. The FCC Should Revamp Form 312 and Its Schedules..... | 5 |
| | E. The FCC Should Streamline Its Earth Station Licensing Regime..... | 6 |
| | F. Many Modifications to Licenses Could Be Accomplished through Notifications Rather Than New Applications | 7 |
| | G. The Commission Should Eliminate the Ability of Complainants to Slow Down the Licensing Process..... | 8 |
| | H. The Commission Should Limit the Number of Conditions It Tacks onto Licenses | 10 |
| | I. The FCC Should Change Its Rules to Treat Domestic Applications and Market Access Petitions the Same | 11 |
| III. | Other Issues Raised in the NPRM | 12 |
| | A. The Commission Should Accept Applications Seeking Waiver of the Table of Allotments | 13 |
| | B. The Commission Should Adopt Shot Clocks for All Applications. | 14 |
| | C. The Commission Should Abandon Its Current Policy on Unbuilt Systems | 15 |
| IV. | Conclusion | 16 |

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

| | | |
|--|---|----------------------|
| In the Matter of |) | |
| |) | |
| Expediting Initial Processing of Satellite and Earth Station Applications |) | IB Docket No. 22-411 |
| |) | |
| Space Innovation |) | IB Docket No. 22-271 |

COMMENTS OF TECHFREEDOM

Pursuant to Sections 1.415 and 1.419 of the Commission’s rules,¹ TechFreedom submits comments in response to the Commission’s Notice of Proposed Rulemaking (NPRM) in the above-referenced proceedings.² In support of these comments, TechFreedom submits:

I. About TechFreedom

TechFreedom is a nonprofit think tank dedicated to promoting the progress of technology that improves the human condition. To this end, we seek to advance public policy that makes experimentation, entrepreneurship, and investment possible, and thus unleashes the ultimate resource: human ingenuity.

TechFreedom and undersigned counsel have a long history advocating for innovative uses of outer space. The instant proceeding sits at the intersection of FCC regulation and

¹ 47 C.F.R. §§ 1.415, 1.419 (2021).

² Expediting Initial Processing of Satellite and Earth Station Applications, Notice of Proposed Rulemaking, 88 Fed. Reg. 2590, FCC 22-95 (released Dec. 22, 2022) (“NPRM”). The NPRM appeared in the Federal Register on January 17, 2023, 88 Fed. Reg. 2590 (Jan. 17, 2023), and set the comment date as March 3, 2023, and the reply date as April 3, 2023. These comments are timely filed.

space law, a place we've inhabited for decades.³ We are uniquely suited to provide commentary in this important proceeding.

II. The New Space Race Needs a Twenty-First Century Licensing Regime

A. This Race Is in the Commercial Sector, but Governments Play a Key Role

We are in a new space race. Not one that pits government against government in a race with a specific goal, such as placing the first humans on the Moon,⁴ but rather a race to establish a cis-lunar economy and better reap the scientific and economic benefits of space resources. The competitors predominantly come from the commercial sector. That is not to say that governments don't play a key role; they do. Indeed, because outer space is inherently international, both physically and legally,⁵ and because under Article VI of the Outer Space

³ TechFreedom, Comments on Space Innovation; Facilitating Capability for In-Space Servicing, Assembly, and Manufacturing (Oct. 31, 2022), IB Docket No. 22-271 & 22-272, <https://techfreedom.org/wp-content/uploads/2022/10/TechFreedom-Comments-FCC-ISAM-NOI.pdf>; *Artemis Accords: One Small Step for NASA, Not So Giant a Leap for Space Law*, TECHFREEDOM (May 15, 2020), <https://techfreedom.org/artemis-accords-one-small-step-for-nasa-not-sogiant-a-leap-for-space-law/>; *Revived National Space Council Could Mean Space Policy Rethink*, TECHFREEDOM (July 7, 2017), <https://techfreedom.org/revived-national-spacecouncil-mean-space-policy-rethink/>; J. Dunstan, "Space Trash:" Lessons Learned (and Ignored) from Space Law and Government, 39 J. OF SPACE L. 23 (2013).

⁴ See W. MCDUGALL, *THE HEAVENS AND THE EARTH: A POLITICAL HISTORY OF THE SPACE AGE* (Basic Books, 1985).

⁵ Activities in outer space are governed by the current international treaty regime. See, e.g., Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *opened for signature* Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 ("Outer Space Treaty" or "OST"); Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, *opened for signature* Apr. 22, 1968, 19 U.S.T. 7570, 672 U.N.T.S. 119 ("Rescue and Return Agreement"); Convention on International Liability for Damage Caused by Space Objects, *opened for signature* Mar. 29 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187 ("Liability Convention"); Convention on Registration of Objects Launched into Outer Space, *opened for signature* Jan. 14, 1975, 28 U.S.T. 695, T.I.A.S. 8480 ("Registration Convention").

Treaty, governments must both authorize and supervise the activities of their nationals.⁶ Governments that provide a stable and frictionless regulatory system will write the rules for this race. This proceeding, among others, is key to positioning the United States as the leader in commercial space. As we've said before, if we get this wrong, America will see companies flee for jurisdictions that are more conducive to the commercial space sector.⁷

B. The FCC's Regulatory System Is Antiquated, Analog, and Antithetical to the Concept of a Frictionless Regulatory System

FCC Chair Rosenworcel perfectly summarized the problem the FCC faces in its satellite licensing regime:

It is not easy to keep up with all this space activity. But it is easy to see how here on the ground, the regulatory frameworks we rely on to shape space and satellite policy were largely built for another era. They were designed for a time when going to space was astronomically expensive. No one imagined commercial space tourism taking hold; no one believed crowd-funded satellites and mega constellations in low-Earth orbit were possible; and no one could have conceived of the sheer popularity of space entrepreneurship.⁸

⁶ See, e.g., *Reopening the American Frontier: Exploring How the Outer Space Treaty Will Impact American Commerce and Settlement in Space: Before the Senate Committee on Commerce, Science, & Transportation Subcommittee on Space, Science, and Competitiveness*, 115th Cong. (2017) (written testimony of James E. Dunstan & Berin Szoka), <https://www.commerce.senate.gov/services/files/A9AD88B2-9636-4291-A5B0-38BC0FF6DA90>, video at <https://www.commerce.senate.gov/2017/5/reopening-the-american-frontier-exploringhow-the-outer-space-treaty-will-impact-american-commerce-and-settlement-in-space>.

⁷ See *id.* ("If a regulatory regime is adopted for mission authorizations that mirrors, or even remotely resembles, the ITAR regime, Congress will have failed to execute our Treaty obligations in a way that promotes the 'exploration and use' of space—the overarching goal of the Treaty (Article II)—and commercial entities will flee the United States to jurisdictions that treat their citizens in a fairer manner, just as satellite manufacturers fled the U.S.").

⁸ Jessica Rosenworcel, Chairwoman, Fed. Comm'n Comm'n, Space Innovation And The FCC (Nov. 3, 2022), <https://www.fcc.gov/document/chairwoman-rosenworcel-remarks-satellite-industry-association>.

We've said this many times before.⁹ But let us put it more starkly—the Commission's licensing regime for satellite systems still remains in an analog world that can't possibly keep up with the current pace of the commercial space sector. FCC Form 312¹⁰ is totally outdated, prone to user error, and not tied into databases that could provide “go/no go” answers to applicants. Both applicants and competitors can game the system to slow down licensing, and FCC staff is burdened with having to manually pore over applications and then work with applicants to correct errors that the application process itself should automatically flag. The NPRM recognizes these shortfalls but offers only incremental solutions. Instead, the FCC should work closely with industry to craft entirely new systems for the twenty-first century that meet the needs of the commercial space sector—and free Commission staff to process applications in a more timely manner. While we support the concept of “shot clocks” as proposed in the NPRM,¹¹ no shot clock will speed processing when the underlying systems are not up to the task. The balance of our comments will offer constructive solutions to this end.

⁹ See TechFreedom, Reply Comments on Allocation of Spectrum for Non-Federal Space Launch Operations (Sept. 10, 2021), ET Docket 13-115, <https://techfreedom.org/wp-content/uploads/2021/09/TechFreedom-Reply-Comments-13-115-9-10-21.pdf>; AIR UNIVERSITY, MAXWELL AFB, FAST SPACE: LEVERAGING ULTRA LOW-COST SPACE ACCESS FOR 21ST CENTURY CHALLENGERS (2017), https://www.airuniversity.af.edu/Portals/10/Research/Space-Horizons/documents/Fast%20Space_Public_2017.pdf (undesigned counsel wrote the regulatory reform section on that document).

¹⁰ FED. COMM'N COMM'N, APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS, FCC-312 (1998), <https://transition.fcc.gov/Forms/Form312/312Fill.pdf> (“Form 312”).

¹¹ NPRM ¶ 19.

C. The FCC Should Convene Industry Workshops to Overhaul Its Licensing Regime

As the Commission has done many times in other radio services,¹² it should bring the satellite industry together to work through the current sticking points in the licensing process, to determine how to make it more efficient, and make less work for itself.¹³ Yes, Commission staff should continue to work with individual applicants to correct application defects without returning applications,¹⁴ but the entire licensing system is in dire need of a complete overhaul that can only be achieved by industry and the Commission working together.

D. The FCC Should Revamp Form 312 and Its Schedules

The NPRM laments the fact that the current licensing regime allows applicants to enter conflicting information in their filings, resulting in wasted staff time and delays in processing.¹⁵ The Commission should create a new Form 312 (or possibly an entirely new

¹² See, e.g., *Development of Consolidated Licensing System*, FCC (May 6, 2010), <https://www.fcc.gov/news-events/events/2010/05/development-of-consolidated-licensing-system>; *Workshop on Spectrum Efficiency and Receivers (Day 1)*, FCC (Mar. 12, 2012), <https://www.fcc.gov/news-events/events/2012/03/workshop-on-spectrum-efficiency-and-receivers-day-1>; *3.5 GHz Workshop*, FCC (Mar. 13, 2013), <https://www.fcc.gov/news-events/events/2013/03/35-ghz-workshop>; *Spectrum Frontiers Workshop*, FCC (Mar. 10, 2016), <https://www.fcc.gov/news-events/events/2016/03/spectrum-frontiers-workshop>.

¹³ See, e.g., NPRM ¶ 2 (“Commission staff conducts an initial review of applications for acceptability for filing and compliance with procedural and substantive rules before they are placed on public notice for comment. Typical issues that prolong staff review and delay acceptance for filing include internal inconsistencies in the application, omission of information required by the rules, omission of waiver requests, missed filing deadlines, and novel issues being raised.”).

¹⁴ NPRM ¶ 5 (“As a practical matter, in some recent instances, staff has found it efficient to aid applicants to address discrepancies or omissions in their pending applications before placing them on public notice, resulting in fewer applications being dismissed prior to being accepted for filing.”).

¹⁵ NPRM ¶ 16.

form) that would automatically check for such errors and warn applicants that the application cannot be accepted without correction.¹⁶ Similarly, the form should be revamped to minimize the input of the same information in multiple places that allows for such errors to creep in.¹⁷ Instead, the form should be amended to auto-populate any portion of the form where the same data is entered more than once. This change alone could save hundreds, if not thousands, of staff hours in processing.

E. The FCC Should Streamline Its Earth Station Licensing Regime

One of the bottlenecks in the licensing of satellite systems is the Commission's approach to earth stations. Currently, earth station licensees must file modification applications to specify new points of communication.¹⁸ The NPRM asks whether this process could be simplified and whether such modification applications could be "deemed granted" after 60 days.¹⁹ TechFreedom believes that the Commission should go even further and

¹⁶ Form 312 is a standardized form use for many applications in the satellite service. Because of the way it is constructed, much of the key information is contained not in the form itself, but the schedules attached to it, which often consist of long narrative statements. The fact that Form 312 is ill-equipped to handle the influx of satellite applications, especially for new and innovative services, is the fact that according to the Paperwork Reduction Act (PRA) analysis, "Public reporting burden for this collection is estimated to be 0.25 – 24 hours including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information." *See* Form 312, *supra* note 10. This wide variance in estimated time to complete should be the FCC's first clue that this form is not well suited for its intended purpose.

¹⁷ NPRM ¶ 16 ("Should we provide additional specificity in our acceptability for filing criteria? Given that internal inconsistencies and omissions are a source of delay in initial application processing, are there any part 25 application rules or application filing guidance that would assist applicants in overcoming this hurdle? For instance, if applicants were to submit relevant technical and other information in only one place in an application, would that reduce the risk of inconsistency?").

¹⁸ *See* NPRM ¶ 18.

¹⁹ *Id.*

develop rules that would allow licensees to specify additional points of communication through a notification process. This would expand the approach the Commission took in 2003 when it licensed earth station networks as part of “fleet management” operations.²⁰ This would also be similar to the approach adopted with the CSAT rules.²¹

To facilitate licensing of earth stations, TechFreedom suggests a hybrid licensing approach under which the common elements (technical parameters, points of communications, etc.) of a network of earth stations could be licensed on a network basis under a single license with only the individual elements (e.g., location) licensed separately. That way a modification of any of the common elements (e.g., a change in antenna parameters that did not increase possible interference) could be accomplished with a single form rather than require the filing of hundreds of nearly identical applications.

F. Many Modifications to Licenses Could Be Accomplished through Notifications Rather Than New Applications

One thing has become clear: the speed of innovation in the satellite sector is accelerating. It is as if Moore’s Law of computing²² has finally made it to space. But because

²⁰ Amendment of the Commission’s Space Station Licensing Rules and Policies, First Report and Order, 18 FCC Rcd 10760, ¶¶ 10-12 (2003) (“Space Station Licensing Reform Order”).

²¹ See First Report and Order, IB Docket No. 00-203, 16 FCC Rcd 11511 (2001) (“FWCC/Onsat First Report and Order”).

²² Heather Ross, *The Complete Guide to Moore’s Law*, COMPUTER HISTORY (Dec. 3, 2022), <https://history-computer.com/moores-law/>. For example, the cost to produce both the space segment and ground terminals for the Starlink system are dropping significantly. See Jon Brodtkin, *Starlink’s ‘Next-Generation’ User Terminal Will Cost A Lot Less, Musk Says*, ARS TECHNICA (June 30, 2021, 3:09 PM), <https://arstechnica.com/information-technology/2021/06/musk-aims-to-cut-starlink-user-terminal-price-from-500-to-as-low-as-250/>; J. Dunstan, *Bring on the Space Barons*, TECHFREEDOM (Sept. 14, 2021), <https://medium.com/@TechFreedom/bring-on-the-space-barons-e425129fbff6> (“What Musk has going for him is not only SpaceX’s much cheaper launches, but the

this innovation is happening so rapidly in a highly regulated environment, many satellite licensees are forced to amend licenses, and even applications, to update the technical parameters of their systems as they mature. Often those modifications are accompanied by a request for special temporary authority (STA), itself necessitated by the increasing launch cadence of satellites. In the same way that applicants and licensees in other radio services are allowed to either file minor modifications, or even notifications,²³ the Commission should consider how it can streamline the modification process to minimize the number of times licensees have to file modification applications and STA requests.

G. The Commission Should Eliminate the Ability of Complainants to Slow Down the Licensing Process

It is no secret that many companies use the Commission's informal complaint procedures under Section 309(b)²⁴ and 1.41²⁵ to try and slow down the licensing of competitor systems. Often application processing is slowed because entities file late comments or wait months to submit additional information without a showing justifying the

price of space hardware itself. Each Starlink satellite costs only \$500,000. That represents a 98 percent reduction of the cost on a price-per-kilogram basis as compared to traditional telecommunications satellites — a two-orders of magnitude reduction. The key, as with *every other innovative product*, is mass production.”).

²³ See, e.g., In the Matter of Amendments of Parts 73 and 74 of the Commission's Rules To Permit Certain Minor Changes in Broadcast Facilities Without a Construction Permit, FCC 97-290, 12 FCC Rcd 12371 (21) (Aug. 22, 1997).

²⁴ 47 U.S.C. § 309(b) (no application shall be granted prior to appearing on public notice for at least 30 days).

²⁵ 47 C.F.R. § 1.41 (“Except where formal procedures are required under the provisions of this chapter, requests for action may be submitted informally. Requests should set forth clearly and concisely the facts relied upon, the relief sought, the statutory and/or regulatory provisions (if any) pursuant to which the request is filed and under which relief is sought, and the interest of the person submitting the request.”).

delay.²⁶ All too often, the Commission will note the lateness of the filing but nonetheless address the complaint on its merits.

This must stop. The Commission should strictly adhere to the timelines set forth for the filing of informal complaints. It must also hold complainants to the standard set forth in Section 1.41: complaints must “set forth clearly and concisely the facts relied upon, the relief sought, the statutory and/or regulatory provisions (if any) pursuant to which the request is filed and under which relief is sought.”²⁷ Any late-filed documents should be dismissed unless the complainant can meet the “high hurdle even at the starting gate” for receiving a waiver for the late-filed pleading.²⁸ The Commission should extend the court’s reasoning in *Networkip, LLC v. Federal Communications Commission* to the informal complaint procedures for satellite applications.²⁹ There, in dismissing a late-filed complaint alleging overcharges in the prepaid telephone card market, the court said:

We have repeatedly “discourage[d] the Commission from entertaining late-filed pleadings ‘in the absence of extremely unusual circumstances.’” *BDPCS, Inc. v. FCC*, 351 F.3d 1177, 1184 (D.C. Cir. 2003) (quoting *21st Century Telesis Joint Venture v. FCC*, 318 F.3d 192, 200 (D.C. Cir. 2003)). Consistent with this warning—which applies to any FCC decision to accept late pleadings, even in non-Meredith [*Meredith/New Heritage Strategic Partners, L.P.*, 9 F.C.C.R.

²⁶ For example, SpaceX filed its third modification application for its Starlink system on April 17, 2020. *See* *Space Exploration Holdings, LLC, Request for Modification of the Authorization for the SpaceX NGSO Satellite System*, IBFS File No. SAT-MOD-20200417-00037 (Apr. 17, 2020) (SpaceX Third Modification Application). A petition to deny the application on environmental grounds was not filed until December 19, 2020, eight months later. *See* *In re Space Exploration Holdings, LLC*, 36 FCC Rcd 7995 (Apr. 27, 2021), *aff’d*, *ViaSat, Inc. v. FCC*, 47 F.4th 769 (D.C. Cir. 2022).

²⁷ 47 C.F.R. § 1.41.

²⁸ *See* *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969) (“Presumptions of regularity apply with special vigor when a Commission acts in reliance on an established and tested agency rule. An applicant for waiver faces a high hurdle even at the starting gate. ‘When an applicant seeks a waiver of a rule, it must plead with particularity the facts and circumstances which warrant such action.’” (quoting *Rio Grande Family Radio Fellowship, Inc. v. FCC*, 406 F.2d 664 (1968))).

²⁹ *Networkip, LLC v. Federal Communications Commission*, 548 F.3d 116 (2008).

6841, 6842–43, ¶¶ 6–9 (1994)] contexts—we hold the FCC’s failure to apply its six-month filing deadline was arbitrary and capricious. We do so reluctantly; given the deference we afford to an agency’s decision whether to waive one of its own procedural rules. See *AT&T Corp. v. FCC*, 448 F.3d 426, 431 (D.C. Cir. 2006). But even deference has limits.

As we explained in *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990), before the FCC can invoke its good cause exception, it both “must explain why deviation better serves the public interest, and articulate the nature of the special circumstances to prevent discriminatory application and to put future parties on notice as to its operation,” *id.* at 1166. The reason for this two-part test flows from the principle “that an agency must adhere to its own rules and regulations,” and “[a]d hoc departures from those rules, even to achieve laudable aims, cannot be sanctioned, for therein lie the seeds of destruction of the orderliness and predictability which are the hallmarks of lawful administrative action.” *Reuters Ltd. v. FCC*, 781 F.2d 946, 950–51 (D.C. Cir. 1986). This basic tenet is especially appropriate in the context of filings. When an agency imposes a strict deadline for filings, as the FCC has done, many meritorious claims are not considered; that is the nature of a strict deadline. The power to waive that strict deadline is substantial, because it allows an agency to decide which meritorious claims get considered. The inverse is true too— the power to waive allows an agency to decide which otherwise liable parties are off the hook.³⁰

Holding all parties to strict filing dates in application proceedings would go far in limiting the ability of parties to delay and game the system by serially presenting “new” facts to the Commission.

H. The Commission Should Limit the Number of Conditions It Tacks onto Licenses

One of the problems with the current licensing system and informal complaint process is that in order to avoid definitely ruling on complaints, the Commission often adds ad hoc conditions to licenses to address concerns raised in the application process.³¹ These

³⁰ *Id.* at 321.

³¹ *See, e.g.*, *In re Space Exploration Holdings, LLC Request for Orbital Deployment and Operating Authority for the SpaceX Gen2 NGSO Satellite System*, FCC 22-91 (Dec. 1, 2022) (granting SpaceX’s

lead to a cumbersome licensing system in which no two licenses look the same or have the same operating conditions. Licensees must keep track of these conditions, and parties interested in determining whether a satellite licensee is operating pursuant to its license must spend time parsing the conditions to the license. While it may be necessary to place conditions on licenses, the Commission should do so sparingly. Especially when it comes to compliance with potential future rule changes, a single rule could be added to Part 25 making clear that all licenses are issued subject to any rule changes later adopted. This overarching rule could go a long way to cutting down the clutter in individual licenses.

I. The FCC Should Change Its Rules to Treat Domestic Applications and Market Access Petitions the Same

One of the true travesties of the existing satellite licensing system is the fact that “foreign”³² applicants for market access often are treated better than applicants that seek a direct license from the FCC.³³ From our understanding, for example, domestic applications

“second generation” Starlink constellation, but including 33 distinct conditions, including a requirement that “SpaceX must continue to coordinate and collaborate with NASA to promote a mutually beneficial space environment that would minimize impacts to NASA’s science missions involving astronomy,” “SpaceX must coordinate with NSF to achieve a mutually acceptable agreement to mitigate the impact of its satellites on optical ground-based astronomy,” ongoing reporting obligations related to conjunction events, disposal of satellites, “collision avoidance system outages or unavailability,” and a requirement that “SpaceX must follow its commitment to work with the scientific community to explore methods to collect observational data on formation of alumina from satellite reentry, to implement reasonable methods that are discovered to the extent practicable, and to report findings from these measurements taken to the Commission.”).

³² We put the term “foreign” in quotes because many times petitioners for market access are U.S. domestic corporations who have simply gone to foreign agencies to get their licenses. At such agencies, they avoid the lengthy delays and administrative scrutiny applied to applications before the FCC.

³³ See Comments of TechFreedom in the Matter of National Orbital Debris Research and Development Plan, 12-14 (Jan. 2021), <https://techfreedom.org/wp->

are vetted at the acceptance stage to determine whether their orbital debris showings are sufficient, whereas such showings in market access petitions are not reviewed until a later stage. This must end. Processing of applications for an FCC license should mirror as closely as possible the processing of petitions for market access, and at no time should market access petitions be subject to less stringent, or different, review.³⁴ Closing this processing loophole would go far to stopping the exodus of U.S. companies to other jurisdictions. More important, putting market access petitions on the same footing as U.S. applications will allow the FCC to continue to lead the world in writing the rules of the road in space.³⁵

III. Other Issues Raised in the NPRM

TechFreedom takes this opportunity to respond to a number of the other issues specifically raised in the NPRM that have not been covered above.

content/uploads/2022/01/TechFreedom-Comments-OSTP-Orbital-Debris-Strat-Plan.pdf; Letter from TechFreedom to FCC (Nov. 2, 2020), <https://techfreedom.org/wp-content/uploads/2021/03/TechFreedom-Letter-to-FCC-11-2-20.pdf> (warning of the danger of the FCC granting “market access” to a company proposing very large satellites and licensed by Papua New Guinea).

³⁴ For example, in the Commission’s recent order decreasing from 25 years to 5 years the time a satellite could remain in LEO post-license, the Commission applied this change to both licensees and recipients of market access orders. *See* FCC Adopts New '5-Year Rule' for Deorbiting Satellites, FCC 22-74 (Sept. 29, 2022), <https://www.fcc.gov/document/fcc-adopts-new-5-year-rule-deorbiting-satellites>.

³⁵ As we’ve warned elsewhere, however, the Commission’s statutory authority over space activities is limited to issues of spectrum allocation and licensing, not operations. *See* Comments of TechFreedom in the Matter of Space Innovation; Facilitating Capability for In-Space Servicing, Assembly, and Manufacturing, IB Docket No. 22-271 and 22-272, 12-13 (Oct. 31, 2022), <https://techfreedom.org/wp-content/uploads/2022/10/TechFreedom-Comments-FCC-ISAM-NOI.pdf>.

A. The Commission Should Accept Applications Seeking Waiver of the Table of Allotments

TechFreedom agrees with the proposal in the NPRM to accept applications for filings which seek licensing of frequencies inconsistent with the then-current table of allotments.³⁶ The current allocations for space communications, especially those for space-to-space communications,³⁷ are insufficient to support a full cis-lunar economy.³⁸ These applications, of course, must be granted on a non-interference basis to existing licensees,³⁹ and applications should be required to submit an engineering exhibit that demonstrates that the

³⁶ NPRM ¶¶ 7-8.

³⁷ *Id.* ¶ 7 n. 17 (“For example, the Commission observed that there may be benefits from use of inter-satellite links in alleviating some of the difficulties faced by small satellite operators in identifying frequencies for Earth-to-space and space-to-Earth links and building or seeking out ground station infrastructure.” (*citing* Streamlining Licensing Procedures for Small Satellites, Notice of Proposed Rulemaking, 33 FCC Rcd 4152, 4182, ¶ 72 (2018))).

³⁸ *See* Comments of TechFreedom in the Matter of Expanding Flexible Use of the 12.2-12.7 GHz Band, WT Docket 20-443, 12 (May 7, 2021), <https://techfreedom.org/wp-content/uploads/2021/05/TF-Comments-12-GHz-NPRM-4-7-21.pdf> (“The argument for protecting space spectrum, for not eating our “seed corn,” is even more compelling today, when several companies are investing billions of dollars in building and now flying mega constellations of NGSO satellites that at last promise to provide high speed, and more critically, low latency, broadband to every corner of the planet. While these systems have been mired in science fiction fantasies for decades, today they are real, and are being deployed as the current debate plays out.”); Comments of TechFreedom in the Matter of Modernizing and Expanding Access to the 70/80/90 GHz Bands, WT Docket 20-133 (Dec. 2, 2021), <https://techfreedom.org/wp-content/uploads/2022/01/TF-Reply-Comments-70-GHz-1-3-22.pdf>.

³⁹ NPRM ¶ 8 (“Specifically, Article 4.4 of the ITU Radio Regulations states that an administration shall not assign any frequency in derogation of the International Table of Frequency Allocations except on the express condition that the station shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the ITU Constitution, Convention and Radio Regulations.”). *See also* NPRM ¶ 14 (“We could also specify that an applicant should state its willingness to accept an assignment on a non-interference, unprotected basis. We could additionally indicate that waiver is more likely if there are ongoing, favorable studies and activities in the relevant ITU study group in support of a potential future allocation at a World Radiocommunication Conference.”).

frequencies can be used without interference.⁴⁰ Failure to support innovative uses of spectrum, as with other frictions in the regulatory system, will drive companies offshore to other jurisdictions.⁴¹

B. The Commission Should Adopt Shot Clocks for All Applications.

TechFreedom supports the NPRM’s proposal to implement shot clocks for applications.⁴² Nothing adds more friction to a regulatory system than agency delay in acting upon applications. The Commission should commit to timely reviewing applications. These shot clocks should apply to all applications, not just those that the Commission deems “straightforward” or “routine.”⁴³ Applying shot clocks only to “easy” applications will stifle the cycle of innovation which has characterized the last decade of NGSO deployment and

⁴⁰ See NPRM ¶ 13 (“We believe waiver requests for satellite operations not in conformance with the International Table of Frequency Allocations, *with sufficient supportive reasoning*, should be considered on their merits rather than being automatically deemed unacceptable for filing as under current rules.” (emphasis added.)). *Id.* ¶ 14 (“For example, we could specify that waiver applicants should provide a sufficient electromagnetic compatibility analysis to support a Commission finding that the intended use of the frequency assignment will not cause harmful interference to all other stations operating in conformance with the ITU Radio Regulations.”). In response, any informal objection alleging interference must be backed by an engineering showing of something more than just theoretical inference. See *ViaSat, Inc. v. FCC*, 47 F.4th 769, 776 (D.C. Cir. 2022) (upholding the FCC’s rejection of engineering showings that used “a different method for assessing interference than what binding regulations require.”).

⁴¹ ASPEN INSTITUTE, TOWARD A NATIONAL SPECTRUM STRATEGY 24 (Sept. 13, 2022), https://www.aspeninstitute.org/wp-content/uploads/2022/09/Spectrum-Report_9_13_22.pdf (“Additionally, wireless technology serves as a platform for innovative applications, with many of the world’s most popular mobile applications developed and headquartered in the U.S. ... Recent events around the globe have demonstrated the risks of ceding leadership to foreign countries, particularly adversarial ones, and the ways in which a robust U.S.-controlled supply chain is in our country’s economic and security interest. As a key input into wireless innovation, spectrum policy necessarily plays an important role in determining U.S. leadership across a wide array of technology-based markets.”).

⁴² NPRM ¶ 19.

⁴³ *Id.* ¶ 17.

leave the United States vulnerable to foreign entities seeking to dominate the cis-lunar system.⁴⁴

Workable shot clocks can be implemented if the other proposals in these comments are also implemented, such as revamping the forms and creating an integrated, database-driven application process.⁴⁵ Because TechFreedom does not file applications in the satellite service, we are not in a position to posit specific processing deadlines.

C. The Commission Should Abandon Its Current Policy on Unbuilt Systems

The NPRM asks whether the Commission should continue to prohibit applicants from filing new applications on top of existing licenses or applications for similar systems that are not yet deployed.⁴⁶ The rule was implemented based on fears that the FCC would be flooded with speculative and duplicative applications, some filed merely to prohibit others from filing, or done with the intent on forcing the FCC to declare a new processing round.⁴⁷ This was understandable 20 years ago, when the future of satellite systems, especially NGSO

⁴⁴ U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION, REPORT TO CONGRESS OF THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION at 16 (2019), <https://www.uscc.gov/sites/default/files/2019-11/2019%20Annual%20Report%20to%20Congress.pdf> (“China views space as critical to its future security and economic interests due to its vast strategic and economic potential. Moreover, Beijing has specific plans not merely to explore space, but to industrially dominate the space within the moon’s orbit of Earth. China has invested significant resources in exploring the national security and economic value of this area, including its potential for space-based manufacturing, resource extraction, and power generation, although experts differ on the feasibility of some of these activities.”).

⁴⁵ Of course, in order for any shot clock to begin running, the underlying application must be deemed acceptable for filing.

⁴⁶ NPRM ¶ 9, *citing* 47 C.F.R. § 25.159(b). *See also id.* ¶ 15 (“We also seek comment on whether the limit on unbuilt NGSO systems rule may be a hinderance to the acceptability of legitimate satellite applications and if so, whether it should be amended.”).

⁴⁷ *See* Amendment of the Commission’s Space Station Licensing Rules and Policies, First Report and Order, 18 FCC Rcd 10760, 10809, 10847 (2003) (“Space Station Licensing Reform Order”).

systems, was far from certain, and on the heels of failed early attempts to license and build large satellite constellations in the 1990s.⁴⁸ That speculation has not occurred, and given the quick pace of deployment and maturation of NGSO systems, it appears that this prohibition is no longer necessary. The Commission's existing tools of bonding and milestone requirements appear sufficient to eliminate future speculation, and the FCC should eliminate the unbuilt system rule.

IV. Conclusion

This is a critical proceeding, and it represents the proper role for the new Space Bureau. Rather than embarking on a voyage to find new authority to regulate innovative space activities,⁴⁹ the Commission should focus on its core regulatory responsibilities, to allocate and license spectrum. Updating the Commission's core licensing system will speed processing and limit the ability of domestic competitors and foreign adversaries to game the system. Overregulation and bad-faith actors must not slow down or stop U.S. companies from delivering innovative satellite communications systems.

TechFreedom looks forward to participating in this and other Commission proceedings to ensure that the United States remains the "go to" jurisdiction for space spectrum licensing, which in turn will allow the U.S. to craft rules for the cis-lunar economy that reflect our ideals and freedoms.

⁴⁸ J. Dustan, *Bring on the Space Barons*, TECHFREEDOM (Sept. 14, 2021), <https://medium.com/@TechFreedom/bring-on-the-space-barons-e425129fbff6>.

⁴⁹ See *The FCC Can't Morph Itself Into the Federal Space Commission*, TECHFREEDOM (Oct. 21, 2022), <https://techfreedom.org/the-fcc-cant-morph-itself-into-the-federal-space-commission/> (citing Congressional concerns that the FCC's ISAM proceeding exceeds its statutory authority).

Respectfully submitted,

_____/s/____

James E. Dunstan

General Counsel

[TechFreedom](https://www.techfreedom.org)

jdunstan@techfreedom.org

1500 K St., NW

Floor 2

Washington, DC 20005

March 3, 2023