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

Application of	)	
SPACE EXPLORATION HOLDINGS, LLC	)	Call Signs: S2983 and S3018
For Modification of Authorization for the SpaceX NGSO Satellite System	)	File No. SAT-MOD-20200417-00037

RESPONSE OF SPACE EXPLORATION HOLDINGS, LLC

Space Exploration Holdings, LLC ("SpaceX") hereby responds to the Opposition filed by the Balance Group ("Balance")[1] to the above referenced application for modification of SpaceX's existing authorization for its Ku-/Ka-band non-geostationary orbit ("NGSO") constellation so that it can operate its remaining satellites at lower and safer altitudes than currently authorized. The Opposition acknowledges that the Commission generally grants modification applications that are consistent with the Commission's policies.[2] But it nonetheless opposes SpaceX's proposed modification without citing a single Commission policy or rule that is inconsistent with the modification SpaceX proposes. Instead, it raises a plethora of loosely related concerns that (1) the Commission has already considered and resolved, (2) misapprehend the regulatory process, or (3) fall well outside the Commission's jurisdiction and expertise. Accordingly, the Commission should dismiss the Opposition.

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1 *See* Opposition to SpaceX Application for Major Modification; and Motion for Consultation with Affected Agencies; Motion for Disclosure; Motion for Certification of Suitably Comprehensive Insurance Coverage; Motion for Certification of Indemnity and Motion to Suspend or Revoke Licenses by The Balance Group, IBFS File No. SAT-MOD-20200417-00037 (May 26, 2020) ("Opposition").

2 *See id.* at 5 (quoting *Space Exploration Holdings, LLC*, 34 FCC Rcd. 2526, ¶ 9 (IB 2019) (citation omitted)).

In addition to being substantively meritless, the Opposition suffers a much larger conceptual flaw that is also and independently grounds for dismissal. Although Balance makes some cursory efforts to tie its concerns to the pending modification request, its broader objective is to use the pending modification as a vehicle to air its opinions about the Commission's policies that have shaped the processing of satellite applications in general. In fact, Balance fails to provide a cogent explanation of how the concerns asserted (or, more often, merely implied through a series of rhetorical questions) relate to the modification it is ostensibly opposing. Accordingly, Balance's concerns are really an untimely attack on the Commission's process for adopting policies it does not like, including those that have supported the grant of satellite licenses such as SpaceX's initial authorization two years ago. Ironically, Balance fails to recognize that the proposed modification would actually address many of the concerns it has raised. For all of these reasons, the Commission should dismiss the Opposition.[3]

A. THE COMMISSION HAS ALREADY CONSIDERED AND RESOLVED MANY ISSUES RAISED IN THE OPPOSITION

Balance implies that SpaceX for failed to provide, and the Commission failed to consider, information relating to a wide range of issues purportedly implicated by the proposed modification. The areas noted include a varied list of topics, including (1) whether the Commission reviews elements of the National Environmental Protection Act ("NEPA"), including assessments of the impact on humans, flora, and fauna;[4] (2) whether the Commission firmly established its space debris rules and had them reviewed by all major players;[5] (3) the Commission's apparent failure

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[3] The Opposition also refers to a series of "motions" but does not support each of those requests individually or cite any rule or other authority under which those requests are made. Therefore, in addition to the flaws in its underlying reasoning discussed herein, this is another basis for denying the "motions."

[4] *See* Opposition at 16.

[5] *See id.*

to require "any mention of whether [SpaceX] secured any insurance against multiple forms of catastrophic failure";[6] (4) the Commission's failure to require peer-reviewed studies and input from other federal agencies with expertise on the impact of radiofrequency ("RF") exposure resulting from the proposed modification;[7] and (5) the Commission's failure to require peer-reviewed studies of the impact on radio astronomy.[8] Yet as discussed below, the Commission has fully considered each of these issues and resolved them, often in a way that obviates the need for individual satellite operators like SpaceX to provide further information in their applications.

- ***National Environmental Protection Act ("NEPA").*** The Commission has determined that actions on space station applications (including modifications) are deemed individually and cumulatively to have no significant effect on the quality of the human environment, and they are therefore categorically excluded from environmental processing.[9] Although the Opposition implies that the absence of an individualized NEPA analysis represents a defect under the statute, that assertion reflects a misunderstanding of the law. As the Council on Environmental Quality, which oversees federal agency implementation of NEPA, has explained, "[c]ategorical exclusions are not exemptions or waivers of NEPA review; they are simply one type of NEPA review."[10]

- ***Orbital debris mitigation.*** The Commission has had clearly articulated rules on orbital debris since 2004 and just concluded a formal rulemaking proceeding in which it updated those rules after assessing comments from a large array of interested parties.[11] SpaceX has provided extensive technical analysis to demonstrate that it meets or exceeds all adopted requirements and is an industry leader on space safety.

- ***Insurance.*** In its recent order on orbital debris, the Commission considered whether to impose an insurance requirement on space station licensees and declined to do so.[12]

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6 *See id.* at 17.

7 *See id.* at 18-19.

8 *See id.* at 20.

9 *See* 47 C.F.R. § 1.1307(b).

10 COUNCIL ON ENVIRONMENTAL QUALITY, *MEMORANDUM FOR HEADS OF FEDERAL DEP'TS AND AGENCIES: ESTABLISHING, APPLYING & REVISING CATEGORICAL EXCLUSIONS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT,* at 2 (2010), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/NEPA_CE_Guidance_Nov232010.pdf.

11 *See Mitigation of Orbital Debris in the New Space Age*, FCC 20-54 (rel. Apr. 24, 2020).

12 *See id.* ¶ 136. The Opposition also questioned whether SpaceX should be required to agree to indemnify the U.S. government in case of an on-orbit incident. However, the Commission is currently seeking comment on that issue, including whether such indemnification is necessary in light of other available remedies and whether the

- ***Radiofrequency exposure.*** The Commission recently concluded a major review of its RF exposure rules in November 2019. It unanimously found that no changes were needed with respect to the NEPA exemptions in its rules, including the rules applicable to the space station application at issue here.[13] In fact, directly contrary to Balance's assertions, the Commission considered input from other federal agencies in finding no credible evidence of a need for stricter rules.

  > [N]o expert health agency expressed concern about the Commission's RF exposure limits. Rather, agencies' public statements continue to support the current limits. The Director of FDA's Center for Devices and Radiological Health advised the Commission, as recently as April 2019, that "no changes to the current standards are warranted at this time." The record does not demonstrate that the science underpinning the current RF exposure limits is outdated or insufficient to protect human safety.[14]

- ***Radio astronomy.*** The Commission has adopted several footnotes to the U.S. Table of Frequency Allocations (many developed by the International Telecommunications Union ("ITU")) that address the need for satellite downlink transmissions to adequately protect the Radio Astronomy Service at specific sites in the United States. Compliance with these requirements is a condition of most satellite authorizations in the relevant bands; SpaceX completed that coordination over a year ago.[15]

Thus, in each case, the Commission has fully considered and authoritatively resolved the concerns raised in the Opposition. The Opposition presents no reason to second-guess those conclusions in this proceeding, nor any reason to fault SpaceX for following Commission rules in its application. Although Balance appears to disagree with the Commission's decisions on each of these points, the disagreement does not seem to be with SpaceX's modification in particular. Accordingly, the Commission should reject the Opposition's criticism of the Commission's processes in general and SpaceX's application in particular.

Commission has the power to impose such a requirement. *See id.* ¶¶ 176-89. Any rule adopted in that proceeding would apply to SpaceX's modified constellation.

[13] *See Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, 34 FCC Rcd. 11687 (2019).

[14] *Id.* ¶ 10 (internal citations omitted). *See also id.* ¶ 13 ("we conclude that the best available evidence, including our consideration of the opinions provided by our expert sister agencies, supports maintaining our current RF exposure standards").

[15] *See* Press Statement 19-005, "Statement on NSF and SpaceX Radio Spectrum Coordination Agreement," NATIONAL SCIENCE FOUNDATION (June 4, 2019), https://www.nsf.gov/news/news_summ.jsp?cntn_id=298678.

B. BALANCE MISAPPREHENDS THE REGULATORY PROCESS

The Opposition vaguely invokes several statutes that it contends impose on the Commission "cross-agency and cross-government obligations" creating "multiple legal obligations to consult" other parts of the federal government with respect to SpaceX's application.[16] Because Balance cites no specific provisions of those statutes, it is hard to divine the source and nature of the obligations to which the Opposition is referring. But as discussed below, it would appear from the listed statutes that Balance is suffering from a fundamental misapprehension as to the regulatory process applicable to satellite licensing processes generally and SpaceX's modification application specifically. In any event, the process affords federal agencies every opportunity to raise any concerns with applications being considered by the Commission.

The Opposition seems to envision an alternative regulatory regime in which a federal licensing agency must affirmatively reach out to all other potentially interested agencies and even some private parties to solicit their input before resolving an application. Notwithstanding the Opposition's general references to several statutes, that is not the regulatory process Congress created. Rather, the Administrative Procedure Act, the Communications Act, and the Commission's implementing rules establish the familiar regime in which all members of the public – not just federal agencies – are given notice of the pendency of an application and an opportunity to participate in the proceeding.[17] With very limited exceptions,[18] that is the vehicle through which interested parties, including other federal agencies, can and do submit their views on an applicant's

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[16] *See* Opposition at 13, 16-17 and n.32.

[17] *See* 5 U.S.C. § 558; 47 U.S.C. § 309; 47 C.F.R. §§ 25.151, 25.154, 25.156.

[18] The Commission will, for example, consult with the National Telecommunication and Information Agency when an application implicates spectrum used by government systems. *See* 47 C.F.R. § 1.102(c).

proposal for the Commission's consideration. Indeed, both NASA and the National Radio Astronomy Observatory commented on SpaceX's initial license application.[19]

The other statutory references in the Opposition are inapplicable here and have no bearing on the SpaceX modification. For example, the Regulatory Flexibility Act applies only in the context of rulemaking proceedings.[20] The Secure 5G and Beyond Act of 2020 calls for development of a strategic plan going forward to ensure the security and integrity of 5G wireless systems – a plan that has not yet been adopted and does not relate specifically to any application.[21] Consultation requirements under the ITU Constitution and Convention relate to international coordination of radio spectrum use that run parallel to and independent of the Commission's licensing process.[22] And as discussed above, the Commission has already had open proceedings to implement NEPA and determined that applications such as SpaceX's proposed modification are categorically excluded.

SpaceX's progress in building and deploying its satellite network has garnered significant publicity, and the company has maintained active engagement with policy and regulatory stakeholders throughout the U.S. government. It is hard to imagine that any federal agency or other interested party would be unaware of these activities. To the contrary, the military has

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[19] *See* Letter from Anne E. Sweet, NASA, to Marlene Dortch, IBFS File No. SAT-LOA-20161115-00118 (June 26, 2017); Letter from Harvey S. Liszt, NRAO, to Hon. Ajit Pai, IBFS File No. SAT-LOA-20161115-00118 (Feb. 17, 2018).

[20] *See* 5 U.S.C. §§ 603, 604.

[21] *See* 134 Stat. 223, Pub. L. 116-129, 116th Cong. (2020). As the Act makes clear, however, it is not to be construed to affect the Commission's authority in any way. *Id.*, Section 5(d)(2).

[22] *See* INTERNATIONAL TELECOMMUNICATIONS UNION, Constitution and Convention (2018), https://www.itu.int/en/history/Pages/ConstitutionAndConvention.aspx. Moreover, to the extent the Commission has adopted technical rules developed by the ITU, SpaceX has addressed those rules in its application. *See, e.g.,* Application, IBFS File No. SAT-MOD-20200417-00037, Technical Attachment, Annex 2 (demonstrating compliance with equivalent power flux-density limits).

contracted with SpaceX several times for trials with its satellite network,[23] and SpaceX has been working with the astronomy community to explore ways to reduce the amount of light reflected from its satellites.[24] SpaceX also engages regularly with NASA. With all of the information already available, all stakeholders – including federal agencies, which are familiar with these processes – should be able to determine whether they have any concerns with SpaceX's plans. Once the Commission officially accepts the modification application for filing, all interested parties will have a full and fair opportunity to bring any such concerns to the Commission's attention. That is the way the licensing process is designed to work for all applicants, notwithstanding Balance's apparent desire to the contrary.

C. BALANCE RAISES CONCERNS THAT FALL WELL OUTSIDE COMMISSION JURISDICTION

The Communications Act directs the Commission to grant an application if it finds that doing so will serve the public interest, convenience, and necessity.[25] Balance concedes the appropriate standard for determining whether grant of SpaceX's application would serve the public interest: "If the proposed modification does not present any significant interference problems and is otherwise consistent with Commission policies, it is generally granted."[26] Balance does not assert that the modification would present any interference issues at all. Tellingly, it also fails to identify a single Commission rule or policy with which the proposed modification would not comply.

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[23] *See, e.g.,* Sandra Erwin, *U.S. Army signs deal with SpaceX to assess Starlink broadband*, SPACE NEWS (May 26, 2020), https://spacenews.com/u-s-army-signs-deal-with-spacex-to-assess-starlink-broadband/; Brian Wang, *US Air Force Funds SpaceX Starlink for $28.7 Million*, NEXT BIG FUTURE (Dec. 21, 2018), https://www.nextbigfuture.com/2018/12/us-air-force-funds-spacex-starlink-for-28-7-milllion html.

[24] *See, e.g.,* Shannon Hall, *SpaceX Plans Sunshades to Save Night Skies from Starlink Satellites,* NEW YORK TIMES (May 6, 2020), https://www nytimes.com/2020/05/06/science/spacex-starlink-astronomy.html.

[25] *See* 47 U.S.C. § 309(a).

[26] *See* Opposition at 5 (quoting *Space Exploration Holdings, LLC*, 34 FCC Rcd. 2526, ¶ 9 (IB 2019) (citation omitted)).

Instead, the Opposition raises a series of questions and concerns that it seems to think would bear upon some aspect of the public interest. But Congress did not grant government agencies a limitless field of review. As the Supreme Court has recognized, though afforded wide latitude in its supervision over communication by wire and radio, "the Commission was not delegated unrestrained authority"[27] and the public-interest standard "is not to be interpreted as setting up a standard so indefinite as to confer an unlimited power."[28] In other words, the Commission is not authorized to engage in an entirely open ended review of any issues untethered to the agency's core mission. Rather, it evaluates license applications based on its own stated policies and rules, taking cognizance of matters within the Commission's expertise as envisioned by Congress. Indeed, Commission action "would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider."[29]

Section 1 of the Communications Act of 1934 establishes the primary reason why Congress created the Commission:

> For the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.[30]

This provides compelling evidence of the considerations Congress intended the Commission to consider, and the envisioned scope of the Commission's expertise. Yet Balance would have the Commission consider such far-flung issues as the celestial navigation capabilities of large ships, whale/turtle/salmon/dolphin migration and spawning, and food production and food security in the

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27 *FCC v. Midwest Video Corp.*, 406 U.S. 649, 706 (1972).

28 *FRC v. Nelson Bros. Bond & Mortgage Co.*, 289 U.S. 266, 285 (1933).

29 *Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983).

30 47 U.S.C. § 151.

United States.[31] These are all undoubtedly important topics in general. But their significance alone does not place them within the jurisdiction or expertise of the Commission and, needless to say, Balance cites no statutory provision that would support the Commission's engaging in such an off-topic inquiry. In addition, while the Opposition raises questions about the effect of light reflected from SpaceX satellites, the only statutory grant of authority to the Commission over lighting issues relates to the obligation *to illuminate* certain radio towers – with no countervailing consideration for the potential effects of such lighting on nearby flora or fauna.[32]

Courts have confirmed that the public interest standard cannot be used to embroil the Commission in extraneous issues far outside its jurisdiction. For example, nearly 50 years ago, a public interest organization concerned with the protection and improvement of television broadcasting asked the Commission to order a halt to construction of the Sears Tower because of the "multiple ghost images" it would create for many viewers in the Chicago area.[33] Although the complainants claimed that the Commission had authority over anything that could "substantially affect communications," the Commission dismissed the complaint as falling outside its jurisdiction, and the court affirmed.

> While we appreciate the need for a flexible approach to FCC jurisdiction, we believe the scope advanced by petitioners is far too broad. The "affecting communications" concept would result in expanding the FCC's already substantial responsibilities to include a wide range of activities, whether or not actually involving the transmission of radio or television signals much less being remotely electronic in nature. Nothing before us supports this extension.[34]

The Commission should reach the same conclusion with respect to the grab bag of disparate issues raised in the Opposition that stray well outside the Commission's jurisdiction and dismiss them.

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[31] *See* Opposition at 11, 19.

[32] *See* 47 U.S.C. § 303(q).

[33] *See Illinois Citizens Comm. for Broadcasting v. FCC*, 467 F.2d 1397 (7th Cir. 1972).

[34] *Id.* at 1400.

D. THE OPPOSITION IS A THINLY DISGUISED AND UNTIMELY ATTACK ON COMMISSION POLICIES UNDERLYING SATELLITE AUTHORIZATIONS, INCLUDING THE INITIAL SPACEX AUTHORIZATION

Although the Opposition purports to raise questions about the proposed modification of SpaceX's NGSO system, it is really a much broader attack on the Commission's policies in general, including those underlying reviews of proposed satellite systems like the initial SpaceX application. Rather than tying its concerns to the modification being considered, the Opposition explicitly calls for the suspension or revocation of SpaceX's authorization[35] and repeatedly raises questions about the original grant.[36] Indeed, its Conclusion asserts that "[t]here is a dire need for numerous expert U.S. agencies, and in many cases, their international counterparts, to assess the world's largest ever attempted satellite network *as licensed*, let alone as proposed for modification."[37]

As demonstrated above, many of the policies that appear to worry Balance were established by the Commission in open public proceedings, including some that were updated quite recently with input from other expert agencies. There is no evidence that Balance participated in any of those proceedings. Similarly, Balance did not raise any questions about SpaceX's initial proposal three years ago when the Commission accepted the application for filing.[38] Instead, Balance waited until SpaceX developed and launched hundreds of satellites before voicing any concerns.

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35 *See* Opposition at 3, 24.

36 *See, e.g., id.* at 9 ("raises the question of whether the original grant contains any such guarantee" with respect to systemic material harm to the public), 11 (questioning effect on celestial navigation of deploying satellites at their currently authorized altitudes), 16 (questioning extent of NEPA review for "the overall SpaceX network as authorized"), 20 (questioning whether other agencies were given an opportunity to assess food security of the SpaceX network "as previously authorized).

37 *Id.* at 23 (emphasis added).

38 *See* Public Notice, Applications Accepted for Filing, 32 FCC Rcd. 4180 (IB 2017).

At this point, even if Balance posed legitimate questions (which it does not), it would be too late to relitigate in this proceeding matters that the Commission resolved long ago.

It is ironic that Balance has chosen SpaceX's modification application as the vehicle to propose a uniquely onerous scope of review, given that aspects of the modification would actually address questions raised in the Opposition. For example, relocating satellites to a lower operating altitude will significantly enhance space safety by ensuring that any orbital debris will quickly re-enter and demise in the atmosphere. Operating at lower altitude may also yield benefits in mitigating the potential impact on astronomical observations – an area in which SpaceX continues to take a uniquely leading position. This mismatch between the concerns Balance raises in its Opposition and the merits of the modification that it opposes simply confirms the obvious: the Opposition is, in reality, an impermissible collateral attack by a party that failed to participate in Commission proceedings on duly adopted rules and policies that establish the framework for processing satellite applications, including the original SpaceX application that was granted two years ago. The Opposition should therefore be dismissed in its entirety.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that, on this 8th day of June, 2020, a copy of the foregoing pleading was served via electronic mail upon:

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