

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND SUMMARY	1
II. AST’S PROPOSED SATELLITE SERVICE IS FUNDAMENTALLY INCOMPATIBLE WITH THE COMMISSION’S RULES AND POLICIES	3
A. AST’s Proposed Satellite Service Contravenes the Commission’s Framework for Allocating Spectrum	4
B. AST’s Petition Does Not Demonstrate That Terrestrial Wireless Licensees Will Be Protected from Harmful Interference.....	6
C. AST’s Petition Should Be Denied Under the <i>DISCO II</i> Framework and Considered in a Rulemaking Proceeding.....	8
III. AST’S REQUEST TO UTILIZE THE V-BAND MUST COMPLY WITH THE COMMISSION’S RULES, AND ITS REQUESTS FOR WAIVERS SHOULD BE ADDRESSED IN A RULEMAKING PROCEEDING	10
A. AST Must Comply with the Commission’s Rules and UMFUS Sharing Framework.....	10
B. AST Is Not Entitled to the Waivers It Requests.....	11
IV. CONCLUSION	14
AFFIDAVIT.....	15

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

In the Matter of)	
)	IBFS File Nos.
AST&Science LLC)	SAT-PDR-20200413-00034
)	SAT-APL-20200727-00088
Petition for Declaratory Ruling Granting)	SAT-APL-20201028-00126
Access to the U.S. Market for a)	
Non-U.S.-Licensed Non-Geostationary)	
Orbit Satellite Constellation)	Call Sign: S3065

PETITION TO DENY OF VERIZON¹

I. INTRODUCTION AND SUMMARY

Verizon opposes AST&Science LLC’s (“AST”) Petition for Declaratory Ruling, even as now substantially amended, and submits this Petition to Deny.² AST seeks market access for its proposed non-geostationary orbit (“NGSO”) satellite constellation, with which it intends eventually to provide satellite based service to smartphones and tablets using spectrum that is reserved for terrestrial wireless operations.³ AST claims that it can connect standard wireless devices, such as smartphones and tablets that are designed to communicate with terrestrial base station antennas, to its proposed constellation of low earth orbit satellites. AST now proposes to wait until it has reached agreement with a terrestrial wireless provider before seeking authorization for its mobile operations. But providing such a satellite based service in terrestrial

¹ The Verizon companies participating in this proceeding are the regulated, wholly owned subsidiaries of Verizon Communications Inc.

² AST&Science LLC Petition for Declaratory Ruling Granting Access to the U.S. Market for a Non-U.S.-Licensed Non-Geostationary Orbit Satellite Constellation, IBFS File Nos. SAT-PDR-20200413-00034 (filed Apr. 13, 2020) (“AST Petition”); SAT-APL-20200727-00088 (filed July 27, 2020); and SAT-APL-20201028-00126 (filed Oct. 28, 2020) (“AST October Amendment”). Verizon submits this petition pursuant to 47 C.F.R. § 25.154. As a terrestrial mobile carrier, Verizon has standing to file this petition.

³ *See, e.g.*, AST Petition at 6 & n.18; AST October Amendment (withdrawing request for access to mobile bands and stating that AST will operate in those frequencies through lease agreements with terrestrial licensees).

spectrum—even through lease agreements—would be incompatible with the Commission’s rules, and AST does not explain how it could actually offer this novel technology without interfering with existing U.S. terrestrial operations and harming hundreds of millions of users. AST’s Petition should be denied for these reasons alone.

Even if AST were able to operate on mobile bands through a lease agreement (which it cannot), AST’s Petition does not satisfy the *DISCO II* framework.⁴ AST does not provide sufficient technical information to allow the Commission or terrestrial operators to assess whether its proposed SpaceMobile satellite network will ultimately cause “unacceptable interference” with existing wireless networks and “possible service disruptions to customers.”⁵ The Commission’s technical requirements are designed “to ensure that a proposed system would be compatible with ongoing and future operations in a particular frequency band.”⁶ AST has not made that showing and, indeed, proposes to defer making that showing until it reaches an agreement with a terrestrial wireless provider.

In addition, even to operate its earth stations that will communicate with its satellites, AST seeks multiple rule waivers, including a broad waiver of the International Table of Allocations.⁷ The Commission should deny these waiver requests, particularly those that would allow AST to offer a fundamentally different use case than that intended by the Commission in bands reserved for Upper Microwave Flexible Use Service (“UMFUS”). For the vast majority of its requests, AST makes no effort to make the kind of showing necessary to satisfy the “good

⁴ See Report and Order, *Amendment of the Commission’s Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Service in the United States*, 12 FCC Rcd 24094 (1997) (“*DISCO II Order*”), recon. 15 FCC Rcd 7207 (1999).

⁵ *Id.* ¶ 156.

⁶ *Id.* ¶ 155.

⁷ See AST Petition at 7-8, 11-15.

cause” requirement: that the underlying purposes of the Commission’s rules would be frustrated by their application to AST and that there is a principled, uniformly applicable reason why special circumstances warrant its waiver requests.⁸ AST’s failure to demonstrate that its proposed operations will not substantially interfere (now or in the future) with existing terrestrial operations makes waiver of the Commission’s rules inappropriate and contrary to the public interest.

II. AST’S PROPOSED SATELLITE SERVICE IS FUNDAMENTALLY INCOMPATIBLE WITH THE COMMISSION’S RULES AND POLICIES

In its original Petition, AST sought satellite system access to several spectrum bands reserved for terrestrial use—including the AWS-1, AWS-3, WCS, and PCS spectrum bands—to communicate directly with handheld wireless devices.⁹ On October 28, 2020, AST materially amended its Petition to remove its request for authorization to use that spectrum, and now seeks access only to certain V-band frequencies for use as gateway links, including the 37.5-42.5 GHz band (downlink) and the 45.5-47 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz bands (uplink). Some of these spectrum bands are shared with terrestrial services, and others would require a waiver of the International Table of Allocations to use.¹⁰ AST states in its newly filed amendment that it will “operate in the spectrum allocated to terrestrial services” through “lease agreements with terrestrial licensees.”¹¹

⁸ 47 C.F.R. § 1.3; *see, e.g., Red Rock Broad., Inc. v. FCC*, 94 F.3d 698, 702 (D.C. Cir. 1996) (“The Commission need not grant a waiver of its Rules unless an application therefor sets out ‘adequate reasons why the Rules should be waived.’”) (citation omitted); *New Orleans Channel 20, Inc. v. FCC*, 830 F.2d 361, 367 (D.C. Cir. 1987) (Commission had not abused its discretion by denying waiver request that “failed to submit sufficiently specific information”).

⁹ *See* AST Petition at 6 & n.18.

¹⁰ *See id.*

¹¹ AST October Amendment.

AST's amendment does not resolve fundamental problems with its proposed satellite service. *First*, even if AST seeks access to mobile bands through lease arrangements in the future, the Commission has allocated those bands exclusively for terrestrial use, and a terrestrial licensee cannot use those bands for satellite services nor lease to others such rights. AST's proposed satellite service remains a fundamentally different use case than that intended by the Commission for Parts 22, 24, 27 and 30. *Second*, AST fails to demonstrate how, even through lease agreements, its operations will avoid causing harmful interference to Verizon and other terrestrial licensees, which have exclusive rights to use that spectrum for the benefit of their customers.

A. AST's Proposed Satellite Service Contravenes the Commission's Framework for Allocating Spectrum

AST seeks market access for its non-U.S. satellite system, which it states is "capable of operating in V-band frequencies and spectrum allocated to terrestrial services."¹² As amended, AST's Petition limits its market access request to the V-band frequencies, but AST makes clear that it also intends to provide "service to handsets on frequencies authorized for service to terrestrial users" through leasing arrangements.¹³ Terrestrial licensees, however, cannot use (or license) terrestrial mobile bands for satellite operations, and for good reason: allowing satellite operations in terrestrial bands would violate the Commission's decision to license those bands exclusively for terrestrial use and would risk harmful interference to terrestrial operations.

Exclusive-use licensing policies have long been central to achieving American leadership in wireless broadband; auctioning spectrum bands for exclusive-use licenses "is the paradigm

¹² *Id.*

¹³ *Id.*

that established the U.S. as the leader in spectrum policy and wireless technologies.”¹⁴ As the Commission has recognized, and as experience has shown, exclusive licenses, along with reasonably long terms, renewal expectancies, and relatively large service areas, provide the certainty that supports large investments by operators.¹⁵ Verizon and other terrestrial operators have invested billions of dollars for exclusive-use spectrum rights, and that investment has directly benefitted consumers and expedited the deployment of mobile and other advanced wireless technologies.¹⁶

AST’s proposed satellite service conflicts with this framework irrespective of whether AST seeks access to terrestrial bands itself or through “lease agreements with terrestrial licensees that will permit AST to access a terrestrial licensee’s spectrum.”¹⁷ And “crafting an effective

¹⁴ Statement of Commissioner Michael O’Rielly, Fifth Report and Order, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 34 FCC Rcd 2556, 2584 (2019).

¹⁵ See, e.g., Report and Order, *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, 29 FCC Rcd 4610, App’x B, ¶ 3 (2014) (“The market-oriented licensing framework for these bands will ensure efficient spectrum utilization and will foster the development of new and innovative technologies and services, as well as encourage the growth and development of broadband services, ultimately leading to greater benefits to consumers.”); FCC, Spectrum Policy Task Force, *Report of the Spectrum Rights and Responsibilities Working Group* 12 (Nov. 15, 2002) (“To the extent that the Commission has adopted a flexible exclusive use approach to spectrum licensing, there is general consensus that the Commission’s most successful application of this approach to date in terms of deployment of service has been broadband Personal Communications service (PCS), operating in the 1850-1910 MHz and 1930-1990 MHz bands.”), <https://transition.fcc.gov/sptf/files/SRRWGFfinalReport.pdf>; Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 32 FCC Rcd 10988, ¶ 6 (2017) (“We believe that it is important to move forward as quickly as possible to auction the non-Federal, exclusive use mmW spectrum made available by this proceeding, to bring the benefits of new broadband services to American consumers.”); *id.* ¶ 24 (noting the “majority of commenters” supported exclusive-use licensing, citing “the market certainty that would be granted by using an established and exclusive-use model, and the accompanying encouragement of investment in the band”); *cf.* Report and Order and Further Notice of Proposed Rulemaking, *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, 18 FCC Rcd 20604, ¶ 57 (2003) (“*Secondary Markets First R&O*”) (“Of particular importance for this proceeding is the Commission’s embrace of policies that provide exclusive use licensees in the Wireless Radio Services with increased flexibility to make use of their licensed spectrum in ways that respond quickly and effectively to evolving needs”); *id.* ¶ 215 (noting exclusive spectrum licenses further “the development and rapid deployment of new technologies,” “promot[e] economic opportunity and competition and ensur[e] that new and innovative technologies are readily accessible to the American people,” and foster “efficient and intensive use of the electromagnetic spectrum”).

¹⁶ See Twentieth Report, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, 32 FCC Rcd 8968, ¶ 3 (2017).

¹⁷ AST October Amendment.

mechanism to share unused spectrum” requires *both* “ensuring the licensee has exclusive use of the areas in which it is using the spectrum” and “*protect[ing] the licensee from interference.*”¹⁸

As described below, AST fails to demonstrate how its proposed satellite service can operate without causing harmful interference to protected terrestrial operations and therefore further threatens to undermine the Commission’s licensing framework and its goals.¹⁹

B. AST’s Petition Does Not Demonstrate That Terrestrial Wireless Licensees Will Be Protected from Harmful Interference

Even if AST were able to provide its proposed satellite service through a lease agreement with a terrestrial provider (which it cannot), AST provides little explanation of how its satellite network will ultimately be able to communicate directly with unmodified, low-power wireless devices, such as smartphones and tablets, in such a way that protects terrestrial wireless operations—and the hundreds of millions of people who rely daily on their wireless services—from substantial interference. In particular, AST fails to provide sufficient information regarding at least three issues with its proposed mobile operations:²⁰

First, conventional, low-power wireless devices, such as smartphones and tablets, lack the power (specifically, or Effective Isotropic Radiated Power, which includes both conducted power as well as the effect of the device’s antenna gain and directivity) to make a reliable

¹⁸ Report and Order and Further Notice of Proposed Rulemaking, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 31 FCC Rcd 8014, ¶ 475 (2016) (emphases added).

¹⁹ Other commenters have raised similar concerns. *See, e.g.*, Sirius XM Radio Inc. Letter at 1 (Sept. 8, 2020) (“AST has not attempted to justify its request to use SDARS spectrum exclusively licensed to Sirius XM or provided an analysis of whether its proposed operations in the WCS frequencies would adequately limit interference into the SDARS band. Given Sirius XM’s complete dependence on the SDARS band to serve its customers, Sirius XM cannot envision an interference analysis that would support AST’s use of this band.”).

²⁰ In this Petition, Verizon focuses on AST’s mobile operations; however, AST has also failed to demonstrate that its space operations and gateway satellite stations will not cause harmful interference to protected terrestrial operations. For one, AST should provide a complete network diagram and specify all frequency bands it will utilize to provide its purported broadband services. In addition, AST should demonstrate how “as a condition of authority granted by the FCC” it will be able “to protect other users down to a level of -20 dB I/N,” as claimed in its supplemental filing. AST Letter at 2 (July 6, 2020).

connection to low-earth-orbit satellites, which are at a distance many times further than the base station antennas that terrestrial providers use to offer service to customers using those devices.

Second, existing LTE devices are also programmed with control loops that expect acknowledgement messaging within time periods consistent with the use of terrestrial antennas and relatively small coverage areas within each cell. In contrast, AST's space-based broadband network will likely face substantial latency issues, because of the need to perform device authentication, low layer control messaging, and other functions via uplinks and downlinks between the devices, its satellites, the satellite gateway, and the terrestrial licensee's own core network. The time that this round trip would take is much more than a conventional LTE system is designed to accept. AST's Petition provides no indication that it is aware of and can address such issues.

Third, satellite-to-smartphone (or tablet) communications face an additional hurdle. Traditional terrestrial mobile devices do not transmit before first acquiring a downlink control signal. Even if AST's satellite network could receive the wireless devices' weak signals, AST would first have to illuminate all the geographic areas in which it seeks to operate for the wireless devices to identify and communicate with its satellites. AST fails to explain why those downlink transmissions would not interfere with wireless providers' terrestrial operations, potentially causing debilitating confusion over the network with which the wireless device should communicate.

In particular, AST provides no indication that it will be able to precisely limit the coverage of its satellite network so that its satellites transmit and receive only in the geographic areas of, and only with the wireless devices of, customers of carriers that elect to enter into spectrum-sharing agreements with AST. For each terrestrial band of intended coverage, AST

would need to map the terrestrial licensees' boundaries to avoid radiating signals into geographic areas where it does not have permission from the licensed carrier to operate. And these boundaries frequently change with secondary market transactions; AST would thus need to monitor and keep track of these changes to ensure no infringement on other users' rights.²¹ Such an approach does not seem possible based on AST's Petition—particularly since AST's NGSO satellites will not provide fixed coverage but instead will constantly be moving. AST has failed to show that it could provide coverage to a partner without bleeding over into geographic areas where it has no permission to transmit. For example, AST provides no indication that its satellite network possesses a feedback mechanism to identify, monitor, and attenuate such interference levels, and therefore avoid terrestrial licensees' boundaries.²²

C. AST's Petition Should Be Denied Under the *DISCO II* Framework and Considered in a Rulemaking Proceeding

The Commission's rules establish two procedures by which a non-U.S.-licensed satellite may provide service in the United States. Both procedures require the satellite operator to provide certain technical information, including all information required in Section 25.114 of the Commission's rules.²³ As the Commission explained in its *DISCO II Order*, certain "technical requirements must be met because allowing a foreign-licensed satellite to provide service into

²¹ Indeed, the Commission has made "efforts to help promote more robust and effective secondary markets in spectrum usage rights," which "permit such rights to flow more freely among users and uses in response to economic demand." *Secondary Markets First R&O* ¶ 59.

²² AST claims that it will use user equipment handsets only with permission of its partner spectrum holders and follow the terms of those agreements. *See* AST Petition at 6. AST further asserts that, because the frequencies it will use are nationwide or cover wide geographic areas, co-channel interference will be a matter of "self-interference" using frequency selection, beam control, power control, and other methods. *Id.* at 8-9; AST Supplement, Technical App'x at 1. But, critically, AST has not provided any detail on how each of the mechanisms can and will be used by the SpaceMobile constellation, nor has it provided any analysis on how these mechanisms would protect licensed terrestrial operations.

²³ *See* 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, *Amendment of the Commission's Space Station Licensing Rules and Policies*, 18 FCC Rcd 10760, ¶ 288 (2003).

the United States may cause unacceptable interference with U.S. systems and possible service disruptions to customers.”²⁴ Where the satellite operator’s services cannot “operate compatibly with U.S.-licensed systems,” the Commission will deny a petition.²⁵

As explained above, AST omits key information regarding how its SpaceMobile satellite network can and will function without causing substantial interference to existing terrestrial operations. Spectrum is a “limited and valuable recourse”²⁶ and the Commission should require this information before granting AST *any* access to spectrum in the U.S. market.²⁷

The Commission should further deny AST’s Petition because its proposed satellite service raises complex technical and policy issues—the Commission must develop a complete record on which a well-reasoned decision can be made. Given the nature of the service that AST eventually proposes to offer, AST’s request for market access should be considered through a rulemaking proceeding to ensure that all interested parties have an opportunity to comment on and fully assess potential interference issues.²⁸ The need for a more complete record is

²⁴ *DISCO II Order* ¶ 156.

²⁵ *Id.*; see, e.g., *GE American Communications, Inc.*, 3 FCC Red 6871 (1988) (denying GE’s request to operate a high powered satellite at an orbital location from which it would cause unacceptable interference to adjacent U.S. satellites).

²⁶ *DISCO II Order* ¶ 155.

²⁷ At a minimum, to the extent the Commission grants AST access to V-band frequencies, it should make clear that AST cannot later rely on that grant as a reason for Commission to grant of further authority in the context of a lease agreement.

²⁸ For example, where NGSO fixed-satellite service (“FSS”) operator SkyBridge LLC sought authority to operate co-frequency with many terrestrial system bands, it filed a petition for rulemaking. See SkyBridge Petition, Amendment of Parts 2.106 and 25.202 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the 10.7-12.7 GHz, 12.75-13.25 GHz, 13.75-14.5 GHz, and 17.3-17.8 GHz Bands, and to Establish Technical Rules Governing NGSO FSS Operations in these Bands, RM-9147 (filed July 3, 1997). Notably, the Commission’s Notice of Proposed Rulemaking, *Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, 14 FCC Rcd 1131 (1998), “sought to ensure that [SkyBridge’s] NGSO FSS operations [would] not cause unacceptable interference to existing users” and “did not propose to permit NGSO FSS uplink operations” in bands that “would raise significant interference concerns,” First Report and Order and Further Notice of Proposed Rulemaking, *Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, 16 FCC Rcd 4096, ¶ 10 (2000).

especially critical here. AST has made clear its desire to access spectrum for which terrestrial operators have made substantial investments to acquire *exclusive-use rights* without a sufficient explanation of how AST can transmit to and from smartphones and tablets over that same spectrum without interfering with those rights and Verizon’s and other terrestrial operators’ investment-backed expectations.

III. AST’S REQUEST TO UTILIZE THE V-BAND MUST COMPLY WITH THE COMMISSION’S RULES, AND ITS REQUESTS FOR WAIVERS SHOULD BE ADDRESSED IN A RULEMAKING PROCEEDING

A. AST Must Comply with the Commission’s Rules and UMFUS Sharing Framework

For its gateway stations—which AST proposes to deploy in unspecified locations in the United States—AST seeks access to the 37.5-42.5 GHz, 45.5-47 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz bands.²⁹ As the Commission recognized in the *Spectrum Frontiers Orders*, ensuring terrestrial operators’ access to high-band spectrum, including in those bands to which AST seeks access, is critical to “securing the Nation’s future in the next generational evolution of wireless technology to so-called 5G.”³⁰ The Commission thus allows siting of new FSS earth stations in bands shared with UMFUS only under specific and limited conditions.³¹ In establishing that sharing framework, the Commission sought to “provide predictability to terrestrial licensees”³² and “to create a regulatory scheme that will suit the development of innovative wireless services for years to come.”³³ Among the requirements codified in Section 25.136 of the Commission’s

²⁹ See AST Petition at 6.

³⁰ Report and Order and Further Notice of Proposed Rulemaking, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 31 FCC Rcd 8014, ¶ 1 (2016) (“*Spectrum Frontiers First R&O*”).

³¹ See, e.g., *id.* ¶ 53; see also Comments of Verizon, IB Docket No. 17-172 (filed Aug. 21, 2020); Reply Comments of Verizon, IB Docket No. 17-172 (filed Sept. 8, 2020).

³² *Spectrum Frontiers First R&O* ¶ 60.

³³ *Id.* ¶ 36.

rules to facilitate the carefully crafted UMFUS sharing regime are requirements for earth station operators to coordinate with UMFUS licensees prior to siting new earth stations and limit the number of earth stations in a licensed UMFUS area.³⁴ AST must comply with these rules.

To facilitate comprehensive review of its market access request, and to allow the Commission and terrestrial operators to ascertain whether AST's proposed service is in compliance with the Commission's rules, it is imperative that AST provide accurate and demonstrable information concerning its proposed FSS operations in the V-band. Indeed, notwithstanding AST's characterization of its proposed V-band operations as FSS operations, its system is a Mobile Satellite Service ("MSS") system, as reflected in its Papua New Guinea license.³⁵ Additional information is required to clarify this apparent inconsistency and better understand the nature of AST's proposed operations in the V-band. Moreover, while AST indicates it "will comply with the Commission's mechanisms for band sharing with UMFUS licensees,"³⁶ an initial review of AST's Petition reveals that AST's proposed use of the 37.5-40 GHz band appears to exceed the power flux density limits for the band. Here, too, clarification and additional information from AST is required to assess whether its planned operations can comply with the Commission's rules, both in the 37.5-40 GHz band and in all other V-band frequencies subject to its Petition.

B. AST Is Not Entitled to the Waivers It Requests

As part of its Petition, AST seeks waivers of multiple Commission rules without cause. The Commission may waive a rule only where "good cause" is shown,³⁷ that is, where "special

³⁴ See 47 C.F.R. § 25.136(a)(4)(i), (c)(1), (d)(4)(i), (e)(4)(i).

³⁵ See AST Petition, Attachment B.

³⁶ AST Petition at 7.

³⁷ 47 C.F.R. § 1.3.

circumstances warrant a deviation from the general rule and such deviation will serve the public interest.”³⁸ “An applicant for waiver faces a high hurdle even at the starting gate.”³⁹ When the Commission grants “limited waivers” to its rules, those waivers must be founded upon an “appropriate general standard”⁴⁰—the Commission “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.”⁴¹ AST has not come close to carrying its burden of showing entitlement to any of the waivers it seeks.

For instance, AST seeks waiver of the U.S. Table of Frequency Allocations for the 42-42.5 GHz and 45.5-47 GHz bands.⁴² The 42-42.5 GHz band is subject to open rulemaking proceeding,⁴³ and consistent with the MOBILE NOW Act, will likely be made available for UMFUS use in the near future.⁴⁴ There should be no new satellite authorizations in that band. The 45.5-47 GHz band, moreover, is primarily allocated to mobile, mobile satellite, and radionavigation-satellite services. AST’s request to provide FSS service in that band should be rejected. FSS allocations are separate from MSS and other satellite allocations to ensure that interference is not caused among disparate uses. AST does not demonstrate that its requested waivers are warranted by “special circumstances” or anything beyond its desire to provide

³⁸ *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

³⁹ *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

⁴⁰ *Id.* at 1159.

⁴¹ *Northeast Cellular*, 897 F.2d at 1166; *see also WAIT Radio*, 418 F.2d at 1159 (describing the rationale for waivers as a “limited safety valve [that] permits a more rigorous adherence to an effective regulation”).

⁴² *See* AST Petition at 7-8.

⁴³ *See* Third Report and Order, Memorandum Opinion and Order, and Third Further Notice of Proposed Rulemaking, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 33 FCC Rcd 5576, ¶ 47 (2018).

⁴⁴ *See* Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless (MOBILE NOW) Act, Pub. L. No. 115-141, div. P, tit. VI, § 604(a), 132 Stat. 348, 1097, 1099 (2018) (codified at 47 U.S.C. § 1503(a)).

service in these bands. Nor does AST explain how the Commission could authorize such broad waivers of the allocation table while creating an “appropriate general standard” that would not destroy its existing framework for allocating spectrum.

In addition, where the Commission has allowed narrow waivers of the Table of Frequency Allocations, it has done so on a non-interference basis and generally for spectrum bands with like uses or similar use cases.⁴⁵ As explained above, the service AST proposes to offer is a fundamentally different use case than that intended by the Commission for Parts 22, 24, 27, and 30, and AST has not provided sufficient information to demonstrate that it will not cause substantial interference to the services for which use of these bands was intended.

Finally, AST’s Petition also requests a waiver of the International Table of Allocations “[t]o the extent necessary.”⁴⁶ But it is not clear why such a waiver would be necessary, and the Commission should deny AST’s vague and broad request. Here, too, AST does not satisfy its heavy burden of demonstrating good cause. UMFUS licensees have invested billions of dollars to acquire millimeter wave licenses and build out their networks. Any decision to permit new services within the mobile and fixed service bands or in adjacent spectrum bands should be addressed in a rulemaking proceeding rather than through vague waiver requests.

⁴⁵ See, e.g., Order and Authorization, *Application of Fugro-Chance, Inc. For Blanket Authority to Construct and Operate a Private Network of Receive-Only Mobile Earth Stations*, 10 FCC Rcd 2860, ¶ 2 (1995). For example, the Commission granted Telesat Canada a waiver for the 17.8-18.6 GHz band, but Telesat Canada provided a technical demonstration showing it would “not cause harmful interference to . . . primary operators in these frequency bands.” Order and Declaratory Ruling, *Telesat Canada Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat’s NGSO Constellation*, 32 FCC Rcd 9663, ¶ 19 (2017). In its supplemental filing, AST points to the Bureau’s grant of DISH Network Corporation’s waiver petition, but there the International Bureau found that waiver was appropriate based on the need for a single licensed entity to coordinate the satellite and terrestrial operations to avoid interference. See Memorandum Opinion and Order, *DISH Network Corporation Petition for Waiver of Sections 27.5(j) and 27.53(h)(2)(ii) of the Commission’s Rules and Request for Extension of Time*, 28 FCC Rcd 16787, ¶ 20 (Acting Chief, Wireless Telecomms. Bur. 2013), *application for review dismissed*, 33 FCC Rcd 8456 (2018), *vacated and remanded*, *NTCH, Inc. v. FCC*, 950 F.3d 871 (D.C. Cir. 2020) (per curiam), *petition for cert. pending*, No. 20-410 (U.S. filed Sept. 23, 2020). That is not the case here.

⁴⁶ See AST Petition at 14-15.

IV. CONCLUSION

For the reasons set forth above, Verizon respectfully requests that the Commission deny AST's Petition.

Respectfully submitted,

William H. Johnson
Of Counsel

/s/ Rachael Bender
Rachael Bender
Daudeline Meme
VERIZON
1300 I Street, NW
Suite 500 East
Washington, DC 20005
(202) 515-2587

Scott H. Angstreich
Bethan R. Jones
KELLOGG, HANSEN, TODD, FIGEL
& FREDERICK, P.L.L.C.
1615 M Street, NW
Suite 400
Washington, DC 20036
(202) 326-7900

Counsel for Verizon

November 2, 2020

AFFIDAVIT

Pursuant to 47 C.F.R. § 25.154, I hereby certify that I am the qualified person responsible for preparation of the information contained in this filing, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the information submitted in this filing, and that it is complete and accurate to the best of my knowledge and belief.

Respectfully submitted,

/s/ Max Solondz

Max Solondz

CERTIFICATE OF SERVICE

I hereby certify that on November 2, 2020, the foregoing Petition to Deny was served by depositing a true copy thereof with the United States Postal Service and sent via electronic mail to the following:

Sallye Clark
Laura Stefani
Mintz, Levin, Cohn, Ferris, Glovsky
and Popeo, P.C.
701 Pennsylvania Ave, NW
Washington, DC 20004
(202) 434-7300
SClark@mintz.com
LStefani@mintz.com

Counsel for AST&Science LLC

/s/ Scott H. Angstreich
Scott H. Angstreich