

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

In the Matter of	)	
	)	
	)	IBFS File No. SAT-MOD-
Space Norway AS	)	Call Sign S2978
	)	
Application for Modification of	)	
Authorization for U.S. Market Access for	)	
the Arctic Satellite Broadband Mission	)	

**APPLICATION FOR MODIFICATION OF AUTHORIZATION FOR U.S. MARKET
ACCESS FOR THE ARCTIC SATELLITE BROADBAND MISSION**

Space Norway AS (“Space Norway”), pursuant to Section 25.117 of the Commission’s rules,¹ respectfully submits this application requesting a modification to its authorization for U.S. market access (the “Authorization”)² by removing the Ku-band frequencies from the scope of its operational authority (the “Modification Application”). Space Norway also provides the Commission with an update to the orbital parameters of the satellite system; the plan for operating within the Ka-band; and the verification of favorable finding of EPFD demonstration from the ITU. Space Norway will separately provide the final details of its orbital debris mitigation and disposal plan, which is required by the Authorization.

Pursuant to section 25.117 of the Commission’s rules,³ Space Norway files this Modification Application as an attachment to its FCC Form 312, and includes an accompanying Technical Narrative, PFD and EPFD masks, and Schedule S. Space Norway notes that there are details to the orbital debris mitigation and disposal plan for the ASBM System that require

¹ 47 C.F.R. § 25.117.

² *Space Norway AS, Petition for a Declaratory Ruling Granting Access to the U.S. Market for the Arctic Satellite Broadband Mission*, IBFS File No. SAT-PDR-20161115-00111, Order and Declaratory Ruling, 32 FCC Rcd 9649 (2017) (“*Space Norway Order*”) (granting Space Norway U.S. market access to operate its Arctic Satellite Broadband Mission constellation (the “ASBM System”) in the Ku- and Ka-bands to provide broadband Internet connectivity services to unserved and underserved communities in the Arctic region of the United States).

³ 47 C.F.R. § 25.117(c).

further investigation, and Space Norway will update the Commission once these results are available. Therefore, Space Norway respectfully requests that the Commission defer treatment of this Application until all technical details are available.

In connection with the grant of this Modification Application, Space Norway respectfully requests a waiver of sections 25.164(b)(1) and 25.165(c) of the Commission's rules.

I. BACKGROUND

On November 2, 2017, the Commission granted Space Norway U.S. market access to operate its Arctic Satellite Broadband Mission constellation (the "ASBM System") in the Ka- and Ku-bands to provide broadband Internet connectivity to unserved and underserved communities in the Arctic region of the United States.⁴ Space Norway notes that, along with commercial services, the ASBM System was also designed to provide X-band operations for the Norwegian government, a configuration that fully utilized the capacity of the satellites in the ASBM system (the "ASBM satellites"). In order to make the ASBM System cost effective, it was designed to support a dual-satellite launch, which had the effect of strictly limiting satellite mass and platform size, such that the planned payloads fully utilized the entire capacity of the spacecrafts.

While Space Norway was preparing its Petition for U.S. Market Access, the U.S. Government initiated discussions exploring inclusion of a possible government hosted payload on the ASBM satellites. These discussions later led to a U.S. – Norwegian, government-to-government process resulting in a bilateral agreement to host the U.S. Air Force (the "Air

⁴ *Space Norway Order*, 32 FCC Rcd 9649. The Arctic region has historically been underserved in respect to broadband connectivity. Terrestrial infrastructure is limited, geostationary satellites are at low elevation angles or beyond the horizon and the bandwidth offered by existing systems is limited. This is largely because the Arctic region has a low population density and limited user base, which makes it difficult to provide broadband services under commercial terms. In light of these challenges, Space Norway has sought to design the ASBM System to be as cost effective as possible, including designing the satellites for the ASBM System with an architecture that supports a dual-satellite launch.

Force”) Enhanced Polar System payload onboard ASBM satellites. Space Norway’s relationship with the Air Force is the first of its kind for a foreign commercial operator, and the Air Force has suggested that these payloads will enable “polar communications coverage” that reduces or eliminates a capability gap for the U.S. military at a savings of \$900,000,000.⁵

Space Norway subsequently conducted a careful trade-off analysis and concluded that, given the restrictions on satellite mass, size and form factor due to the dual-launch architecture of the ASBM System, it would not be technically feasible to include more than one commercial payload in addition to the two government payloads for the initial two-satellite ASBM System. Consequently, in 2019 Space Norway made the determination to remove the commercial Ku-band payload and offer commercial services exclusively in the Ka-band.

Once the decision to keep the Ka-band payload and remove the Ku-band payload from the initial two-satellite ASBM system was made, it was decided to initiate a possible follow-on project. This follow-on would expand the governmental capabilities of the system, and additionally identified the opportunity to include a Ku-payload in the constellation, making use of the Ku-band authorization in the Commission’s grant for the ASBM System. Unfortunately, the global pandemic increased the challenges of effectively conducting intergovernmental coordination, delaying the follow-on project, and ultimately making it no longer feasible to include a commercial Ku-band payload.

Accordingly, Space Norway decided that the follow-on project will not include Ku-band capabilities, and initiated preparation of this Modification Application in 2021, however its submission has been delayed due to Space Norway’s decision to simultaneously seek to address and update other aspects of the grant such as the orbital debris mitigation strategy.

⁵ See Heather Wilson, *Address at the 35th Annual Space Symposium*, American Rhetoric, <https://www.americanrhetoric.com/speeches/heatherwilsonspacesymposium35.htm> (April 9, 2019); see Kimberly Underwood, *The Air Force Restructures its Space and Missile Systems Center*, Signal (AFCEA International), <https://www.afcea.org/content/air-force-restructures-its-space-and-missile-systems-center> (January 1, 2019).

Despite production delays by Space Norway’s subcontractors due to the COVID-19 pandemic and other factors beyond Space Norway’s control, the schedule for the ASBM System satellite manufacturing and testing processes has remained within acceptable parameters and Space Norway remains on pace for ASBM System deployment and operation before the November 3, 2023 deadline set forth in the Authorization.⁶

II. GRANT OF THE REQUESTED MODIFICATION IS CONSISTENT WITH THE COMMISSION’S RULES AND THE PUBLIC INTEREST

Section 25.117 governs the modification of space station licenses.⁷ Section 25.117 states that “applications for modifications of space station authorizations will be granted,” with limited exceptions.⁸ Thus, the Commission will grant a modification application unless one of the exceptions in Section 25.117(d)(2) applies. There are two exceptions in Section 25.117(d)(2) that are relevant to Space Norway’s modification request. The first exception is when “granting the modification request would not serve the public interest, convenience, and necessity.”⁹ In determining whether a requested modification serves the public interest, the Commission focuses on whether the proposed modification presents significant interference problems and is otherwise consistent with Commission policies.¹⁰ If a modification would harm the interference environment, the Commission views this as a strong indication that a grant of the modification would not be in the public interest.¹¹ The second exception states that “applications for modifications of space station authorizations to increase the authorized

⁶ *Space Norway Order*, 32 FCC Rcd. at 9661, para. 29.

⁷ 47 C.F.R. § 25.117.

⁸ 47 C.F.R. § 25.117(d)(2).

⁹ 47 C.F.R. § 25.117(d)(2)(ii).

¹⁰ *Teledesic LLC*, Order and Authorization, 14 FCC Rcd. 2261, 2264, para. 5 (IB 1999). *See also The Boeing Co.*, 18 FCC Rcd. 12317, para. 7 (IB 2003) (“In recognition of the length of time it takes to construct a satellite system, the rapid pace of technological change, and the goal of promoting more efficient use of the radio spectrum, the [Commission] has granted such requests in cases where the proposed modification presents no significant interference problem and is otherwise consistent with Commission policies.”).

¹¹ *See Space Exploration Holdings, LLC*, Order and Authorization, 34 FCC Rcd. 2526 (IB 2019).

bandwidth will not be considered in cases in which the original space station license application was granted pursuant to the procedures set forth in [Section] 25.157(e)....”¹²

Space Norway does not seek to increase the authorized bandwidth of its original U.S. market access grant. Rather, Space Norway wishes to *decrease* the authorized bandwidth of its original U.S. market access grant by removing Ku-band frequencies from the scope of the grant. Space Norway otherwise intends to operate its modified system in accordance with the conditions set forth in its initial U.S. market access authorization. Therefore, the “increase in authorized bandwidth” exception does not apply, and the requested modification should be granted so long as it serves the public interest.

Space Norway’s requested modification serves the public interest because the requested modification: (i) minimizes the potential for interference with terrestrial systems and with other NGSO operators, since such NGSO operators and terrestrial systems will have one less NGSO system to perform coordination with in the Ku-band; (ii) will not degrade the potential services provided to consumers, or otherwise disadvantage or prejudice consumers in any manner; and (iii) will accelerate the provision of services by Space Norway to consumers in underserved areas in the Arctic region of the United States. Additionally, Space Norway’s requested modification is consistent with the Commission’s policy with respect to its NGSO processing round procedures, which place a strong emphasis on avoiding interference between authorized NGSO systems.¹³

III. WAIVER OF MILESTONE AND SURETY BOND REQUIREMENTS

¹² 47 C.F.R. § 25.117(d)(2)(iv).

¹³ See, e.g., *ViaSat, Inc. Petition for Declaratory Ruling Granting Access for a Non-U.S. Licensed Non-Geostationary Orbit Satellite Network*, Order and Declaratory Ruling, 35 FCC Rcd 4324, para. 12 (2020) (“[T]he fact that the number of satellites proposed is reduced, the altitude of the proposed orbits remains the same, and the frequencies requested are unchanged mean that the number of potential interference events between ViaSat’s proposed satellites and other satellites being proposed in the same processing rounds is likely to be decreased and the number of times constellations will be required to reduce spectrum will also likely be smaller... Thus, we conclude that ViaSat’s Amendment is not a major amendment.”)

Pursuant to section 1.3 of the Commission's rules, the Commission may waive application of its rules for "good cause" shown.¹⁴ A waiver of the Commission's rules is appropriate if (i) "special circumstances warrant a deviation from the general rule" and (ii) "such deviation would better serve the public interest than would strict adherence to the rule."¹⁵ In determining whether a waiver is appropriate, the Commission may "take into account considerations of hardship, equity, or more effective implementation of overall policy."¹⁶ For the reasons below, there is good cause for the Commission to grant Space Norway a waiver of section 25.164(b)(1) and section 25.165(c) of the Commission's rules.

Waiver of Section 25.164(b)(1) of the Commission's rules. Section 25.164(b)(1) of the Commission's rules requires a recipient of an initial license for an NGSO satellite system to "launch [its] space stations, place them in the assigned orbits, and operate them in accordance with the station authorization no later than six years after grant of the license," unless the Commission establishes a different schedule.¹⁷ The Commission instituted these milestone requirements to deter warehousing.¹⁸ According to the Commission, the policy and rules concerning the milestone requirements "are intended to offset the incentives for warehousing behavior that are harmful to both competition and consumers and to encourage the rapid deployment of new spacecraft and the optimal utilization of scarce orbital and spectrum resources."¹⁹ Warehousing concerns do not apply here, as Space Norway is seeking to surrender spectrum, not retain it.

¹⁴ See 47 C.F.R. § 1.3. See also *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969); *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990).

¹⁵ *Northeast Cellular*, 897 F.2d at 1166.

¹⁶ *WAIT Radio*, 418 F.2d at 1159.

¹⁷ 47 C.F.R. § 25.164(b). Pursuant the Authorization, Space Norway is required to launch 50% of the satellites for the ABSM System, place such satellites in their assigned orbits, and operate them pursuant to its market access authorization no later than six years after grant of the authorization (*i.e.*, no later than November 3, 2023).

¹⁸ *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, IB Docket No. 12-267, Second Report and Order, 30 FCC Rcd. 14713, 14735, para. 53 (2015) ("*Part 25 Second R&O*").

¹⁹ *Id.*

Here, special circumstances warrant a deviation from the general application of sections 25.164(b)(1) and 25.165(c) of the Commission’s rules. Space Norway reiterates that in order to fulfill its obligations to the U.S. Government – obligations that are critical to the national security of the United States. After careful consideration and consultation with its engineers, Space Norway concluded that it was necessary to remove its Ku-band payloads from ASMB satellites in order to accommodate the Air Force payloads. This means that Space Norway will no longer be able to meet its milestone requirements under the Authorization to provide service in the Ku-band. In this regard, a failure to grant a waiver of section 25.164(b)(1) of the Commission’s rules would not only be unjust, but also inconsistent with the public interest as Space Norway is required by both the U.S. and Norwegian Governments to fulfill its obligations under the contract with the Air Force, which is a matter of national security for the United States. Moreover, a failure to grant such a waiver would have a chilling effect on other operators from entering into agreements with the U.S. Government, which could cost the U.S. Government millions in savings – in this case a suggested \$900,000,000 in savings.

Space Norway also notes that granting a waiver of section 25.164(b)(1) of the Commission’s rules will not have a significant impact on competition in the Ku-band or consumers. The ASBM System is not an oversized satellite system “warehousing” valuable spectrum and orbital resources to the detriment of other NGSO operators wishing to operate in the Ku-band. Rather, the ASBM System is a constellation of two satellites holding a very minor portion of spectrum in the Ku-band. Therefore, granting the waiver will not be inconsistent with the Commission’s policy to deter warehousing.

Waiver of section 25.165(c) of the Commission’s rules. Section 25.165(c) of the Commission’s rules states “a licensee will be considered to be in default with respect to a bond filed pursuant to paragraph (a) of this section if it surrenders the license before meeting an applicable milestone requirement in § 25.164(a) or (b)(1) or if it fails to satisfy any such

milestone.” In the *Part 25 Second R&O*, the Commission stated that it created its bond requirements under Section 25.165 of the Commission’s rules “to help ensure that the applicant has the financial wherewithal and commitment to build and operate the satellite and associated service, and that the applicant is not using the application process as a way to speculate or warehouse spectrum without the capability or bona fide intention to secure the requested license and carry the endeavor through to the provision of service.”²⁰

Here, a granting a waiver of section 25.165(c) of the Commission’s rules will not run afoul with the Commission’s underlying policy goals for the satellite bond requirement. First, there is no question as to whether Space Norway has the financial wherewithal and commitment to build and operate the ASBM System and associated services. Space Norway has been operating since 1995, construction of the ASBM System satellites is in a mature phase, launch services have been contracted, numerous commercial customers and the Air Force have contracted with Space Norway to use the ASBM System and importantly, as a state-owned company - wholly owned by the Norwegian Ministry of Trade, Industry and Fisheries - it has the support and resources of the Norwegian Government.

Second, Space Norway did not use “the application process as a way to speculate or warehouse spectrum without the capability or bona fide intention to secure the requested license and carry the endeavor through the provision of service.” At the time of the Commission’s grant of the Authorization, Space Norway had every intention to operate the ASBM System in both the Ka- and Ku- bands. However, as discussed in detail above, Space Norway determined that it could no longer operate ASBM System using both the Ka- and Ku- bands while still fulfilling its obligations to the U.S. Government due to the physical limitations of the ASBM satellites. In this regard, it would be unjust and not in the public interest for the Commission to financially penalize Space Norway for a modification to the Authorization that (i) will reduce

²⁰ *Part 25 Second R&O*, 30 FCC Rcd. at 14726, para. 28.

the potential for interference to Ku-band operators, (ii) will save the U.S. Government a suggested \$900,000,000, and (iii) will serve the national security interests of the United States.

Finally, Space Norway reiterates that, with the exception of operating in the Ku-Band, it fully intends to launch 100% of the satellites for the ASBM System, place such satellites in their assigned orbits, and operate them pursuant to its authorization by no later than November 3, 2023, as required by the Authorization. Therefore, granting a waiver of section 25.165(c) of the Commission's rules will not run afoul with the Commission's underlying policy goals "to help ensure that the applicant has the financial wherewithal and commitment to build and operate the satellite and associated service, and that the applicant is not using the application process as a way to speculate or warehouse spectrum without the capability or bona fide intention to secure the requested license and carry the endeavor through to the provision of service."

Notwithstanding the foregoing, granting a waiver of sections 25.164(b)(1) and 25.165(c) of the Commission's rules will not create precedent for other operators to use when seeking a waiver of their milestone and bond requirements. The facts surrounding Space Norway's waiver request are so unique to this Modification Application that it would be very difficult for another operator to compare their application for modification. Space Norway is not aware of any another satellite operator that may be similarly situated, with obligations to advance an agreement between the United States and Norwegian governments.

For the foregoing reasons, the Commission must grant Space Norway a waiver of sections 25.164(b)(1) and 25.165(c) of the Commission's rules.

CONCLUSION

For the reasons set forth herein, Space Norway respectfully requests the Commission to grant the Modification Application once Space Norway provides the Commission with final details pertaining to its debris mitigation and disposal plan. Space Norway also

respectfully requests the Commission to grant a waiver of sections 25.164(b)(1) and 25.165(c) of the Commission's rules.

As stated above, Space Norway also provides the Commission with updates to the ASBM System's orbital parameters, its Ka-band frequency plan, verification of a favorable finding of EFPD demonstration from the ITU, and updates to the orbital debris mitigation and disposal plan as requested in the U.S. market access grant.

Respectfully submitted,

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