

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C. 20554

In the Matter of)
)
Procedures to Govern the Use of Satellite Earth) IB Docket No. 02-10
Stations on Board Vessels in 5925-6425)
MHz/3700-4200 MHz Bands and 14.0-14.5)
GHz/11.7-12.2 GHz Bands)
)

To: The Commission

COMMENTS OF MARITIME TELECOMMUNICATIONS NETWORK, INC.

**MARITIME TELECOMMUNICATIONS
NETWORK, INC.**

By: Raul R. Rodriguez
Stephen D. Baruch
Philip A. Bonomo
Erin E. Kucerik (Admitted in FL only)

Leventhal, Senter & Lerman PLLC
2000 K Street, NW, Suite 600
Washington, DC 20006
(202) 429-8970

February 23, 2004

Its Attorneys

TABLE OF CONTENTS

I.	Introduction and Summary	1
II.	ESV Operations Require Access To The C-Band, Which Has Technical And Economic Features That Are Unavailable At Ku-Band.	6
	A. Ku-Band Must Complement, Not Replace, C-Band.....	7
	B. C-Band Offers Technical Advantages Unmatched By Ku-Band.	8
III.	The Commission Should Encourage ESV Use Of The C-Bands – Subject To Rational And Meaningful Technical And Regulatory Conditions.	11
	A. ESV Operations In The C-Band FSS Downlink Spectrum	11
	B. ESV Operations In The C-Band FSS Uplink Spectrum	12
	1. The Proposed Non-Coordination Approach Must Be Rejected.....	13
	2. ESVs Operations In C-Band Should Be Authorized On A Co-Primary Basis Under A Modified Coordination Approach.	14
	C. Blanket Licensing And Application Provisions Applicable To C-Band Operations	20
IV.	A Comprehensive ESV Regulatory Framework Requires Ku-Band Licensing In Addition To C-band Licensing.	23
	A. The Commission’s Segment-Specific Ku-Band Proposals.....	24
	B. Operational Considerations For ESV Networks In The Ku-band	26
V.	Real-Time Tracking Of ESV-Equipped Vessels Should Be Implemented Only If Security Is Not Compromised And Existing Interference Resolution Mechanisms Are Employed.	30
VI.	Section 306 Of The Communications Act Does Not Bar The Licensing Of ESVs On Foreign-Flagged Vessels.....	31
VII.	Conclusion	32

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C. 20554

In the Matter of)
)
Procedures to Govern the Use of Satellite Earth) IB Docket No. 02-10
Stations on Board Vessels in 5925-6425)
MHz/3700-4200 MHz Bands and 14.0-14.5)
GHz/11.7-12.2 GHz Bands)
)

To: The Commission

COMMENTS OF MARITIME TELECOMMUNICATIONS NETWORK, INC.

Maritime Telecommunications Network, Inc. (“MTN”), by its attorneys and pursuant to Sections 1.415 and 1.419 of the Commission’s rules, 47 C.F.R. §§ 1.415, 1.419, hereby comments on the Federal Communications Commission’s (“Commission”) Notice of Proposed Rule Making (“NPRM”) in the above-captioned proceeding.¹

I. Introduction and Summary

With the NPRM, the Commission proposes and seeks comment on a regulatory framework for licensing satellite earth stations on board vessels (“ESVs”) in fixed-satellite service (“FSS”) networks in the C- and Ku-bands.² The Commission claims that its proposals

¹ *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands*, Notice of Proposed Rule Making, 18 FCC Rcd 25248 (2003). MTN is the leading provider of satellite telecommunications services to the world’s cruise lines, offshore oil and gas rigs and vessels, and other maritime applications. For more than twelve years, MTN has provided the maritime community, including scores of passenger liners worldwide, with a wide array of dependable broadband communications service offerings through its ESVs using FSS satellites.

² For purposes of the NPRM, the C-band refers to frequencies in the 3700-4200 MHz (downlink) and 5925-6425 MHz (uplink) bands. The Ku-band refers to frequencies in the 11.7-12.2 GHz (downlink) and 14.0-14.5 GHz (uplink) bands. NPRM at n.1-2.

would “enable important new communications services to be provided to consumers on board vessels,” yet the NPRM ultimately advances a misguided regulatory regime that, in its effort to provide absolute protection to Fixed Service (“FS”) operators in the C-band from a theoretical threat of harmful interference that has failed to materialize during more than a dozen years of C-band ESV operations, threatens to stifle development of the ESV industry.

The Commission’s overt bias toward the FS at the expense of ESVs is puzzling and disappointing. Two years ago, the Commission issued a Notice of Inquiry (“NOI”) seeking comment on many of the issues raised in the NPRM.³ In response to the NOI, MTN and other parties filed detailed, thoughtful, and uncontroverted comments that offered compelling evidence that directly addressed – and should have resolved – key issues involving ESVs, including the necessity of ESV operations in the C-band and whether, and under what conditions, the FS and ESVs can co-exist. Yet the Commission chose to revisit these issues in the NPRM as if the record developed pursuant to the NOI did not exist. MTN is at a loss to explain why, in the absence of credible opposition to its comments below, the Commission felt compelled to do so.

Many of the proposals advanced in the NPRM, and indeed the Commission’s overall unsubstantiated prejudice against continued ESV use of C-band FSS frequencies, run counter to the Commission’s statutory obligations and its well-settled spectrum policies. The pro-FS proposals, for example, clearly flout the will of Congress, as reflected in the Commission’s statutory obligation to promote new technologies like ESV. Section 7 of the Communications Act of 1934, as amended, provides that it is:

³ *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in Bands Shared With Terrestrial Fixed Service*, Notice of Inquiry, 17 FCC Rcd 2646 (2002).

the policy of the United States to encourage the provision of new technologies and services to the public. Any person or party (other than the Commission) who opposes a new technology or service proposed to be permitted under this Act shall have the burden to demonstrate that such proposal is inconsistent with the public interest.

47 U.S.C. § 157. Far from “encouraging” the provision of ESVs, the Commission uses its NPRM to propose the establishment of a regulatory framework that, if adopted, would place the ESV industry in jeopardy by denying it the regulatory certainty that it has sought for more than a decade. Significantly, other than to state that the C-band is “used extensively” by the FS, the NPRM offers no support for the punitive manner in which the Commission would regulate C-band ESVs.⁴ Opponents of ESVs have failed to demonstrate that ESVs are inconsistent with the public interest, relying instead on vague, infrequent, and unsubstantiated claims about the threat of interference from a service that has been successfully operating in the band for more than a dozen years.⁵ As MTN has previously explained, a total of two *allegations* of harmful interference from C-band ESVs to FS licensees have been made in the twelve years of C-band ESV operation in the United States, and in both cases, the cause of interference was determined to be from a source other than an ESV operator.⁶

The Commission’s proposals ultimately pay mere lip service to two important policy goals: market-driven deployment of broadband technologies and efficient spectrum usage.⁷

⁴ NPRM at ¶ 29.

⁵ FS licensees, as part of their daily operations, keep logbooks documenting outages. Despite this thorough documentation, FS licensees have not provided a single substantiated case of ESV interference to terrestrial FS operations.

⁶ See NOI Reply Comments of Maritime Telecommunications Network, Inc. at 12-14 (“MTN NOI Reply Comments”).

⁷ NPRM at ¶ 3.

While the Commission acknowledges that ESVs are capable of offering a wide range of broadband services to consumers both in port and en route between ports, adoption of its restrictive proposals would prevent MTN and others from fully exploiting that capability, and deny them the regulatory certainty they seek in order to compete effectively in today's complex marketplace.⁸ Not only would this serve to dampen a growing demand for broadband communications, it could pose significant homeland security concerns by jeopardizing the rapid and efficient data transfer that ESVs alone can provide to cruise ship operators clearing passengers through customs and immigration. The NPRM also fails to account for the spectrum efficiency that is a hallmark of ESV operations in the C-band. Rather than encouraging ESV use of the Ku-band as a substitute for C-band, the Commission should be promoting ESV C-band operations as a means of using spectrum over the high seas that would otherwise lie fallow.

Throughout the NRPM, the Commission seeks to mitigate the potential for ESV operations to cause interference to FS receivers, in part, because of the public safety and critical infrastructure purposes that the FS provides.⁹ Yet the C-band is a commercial band, *not* a safety service band,¹⁰ and as such the Commission may not grant a regulatory advantage to particular applications in the fixed service there – no matter how nominally worthwhile the application may be. The Commission's new justification for restrictive ESV licensing based on the C-band presence of public safety entities, railroads, pipelines or electric utilities is of no legal consequence and should not factor into the Commission's rulemaking. This is even more the

⁸ *Id.*

⁹ *See, e.g., id.* at n.62.

¹⁰ There are bands allocated by the Commission for safety services where commercial interests may not operate.

case when none of these entities has provided credible evidence of interference to their C-band operations from C-band ESVs.

Finally, MTN notes that, with the NPRM, the Commission ostensibly seeks to implement domestically decisions reached at the International Telecommunication Union's ("ITU") 2003 World Radiocommunication Conference ("WRC-03").¹¹ In several critical respects, however, the NPRM ignores these decisions, which were the product of more than eight years of deliberation and debate. If the Commission were to adopt an approach to C-band licensing inconsistent with the Radio Regulations of the ITU, it would considerably complicate international coordinations with neighboring countries and with ESVs licensed in other jurisdictions that are in compliance with international regulations. Significantly, the United States led the international effort by promulgating the ESV regulations and licensing procedures that were eventually adopted at WRC-03. Thus MTN finds it inexplicable that the Commission would now propose to cede its international leadership role on ESV matters by materially abandoning the international consensus it helped achieve only last year – particularly in the absence of any evidence supporting a contrary regulatory approach.

In order to achieve the statutory and policy goals addressed above, and to better account for the comments filed previously in this proceeding and decisions reached internationally, the Commission needs to implement a regulatory framework that fairly accommodates the use of ESVs in FSS networks while protecting the *legitimate* interests of the FS. To that end, MTN urges the Commission to adopt rules and policies consistent with the comments offered below.

¹¹ *Id.* at ¶ 2.

As MTN has maintained from the beginning of this proceeding, if the Commission is unprepared or unable to step up and adopt fair and balanced rules that promote ESVs without jeopardizing extant FS operations, it should abandon its C-band effort and maintain the status quo of operation on a non-interference basis (“NIB”).¹² This proceeding, after all, is about establishing rules to govern the use of ESVs at C-band. It would be a cruel twist of fate if the proceeding became the means by which U.S. operators of C-band ESVs were obliged to operate on a non-interference basis despite the eight years of U.S. leadership in establishing the international regulatory regime.

II. ESV Operations Require Access To The C-Band, Which Has Technical And Economic Features That Are Unavailable At Ku-Band.

As MTN explained in its comments filed in response to the NOI, the C-band frequencies are the most appropriate FSS band for ESV-based services because of their extensive reach over ocean areas. No one can rationally challenge the proven ability of ESVs effectively and efficiently to use C-band FSS frequencies without causing interference to other operations. The Commission acknowledges that ESV operation in the C-band is “desirable,” yet paradoxically states that it “strongly favor[s] rules that would encourage ESV use of the Ku-band over the C-band.”¹³ The Commission’s unabashed desire to cleanse the C-band of ESVs disregards completely the infungibility of the C-band and Ku-band FSS frequencies for ESV use, and kowtows to the unsubstantiated paranoia and irresponsibly unrealistic refusal of the FS industry to share the burden of maximizing the efficient use of the radiofrequency spectrum.

¹² NOI Comments of Maritime Telecommunications Network, Inc. at 19 (“MTN NOI Comments”).

¹³ NPRM at ¶¶ 29, 43. *See also id.* at ¶ 60.

A. Ku-Band Must Complement, Not Replace, C-Band.

While Ku-band is suitable for certain commercially available and technically appropriate ESV uses, the band can only complement, not replace, ESV operations at C-band. As a practical matter, and in response to the Commission's query on this point, there simply is not enough Ku-band transponder availability to support the level of service that MTN and others provide.¹⁴ Mandating ESV use of the Ku-band over the C-band, either affirmatively or through the indirect means proposed in the NPRM, would only exacerbate this shortage.¹⁵

Ku-band has limited geographic coverage compared to C-band, given its typical regional and spot beam configuration that covers high population-density land masses, but which only provides limited coverage to coastal waters – and no coverage of the open seas.¹⁶ This is in sharp contrast to the broad geographical coverage provided by C-band transponders that cover entire ocean regions, and which is not limited to specific shipping routes. While the footprint of a Ku-band satellite may extend from the coastline in some instances, these are the exceptions rather than the rule. Moreover, the provision of continuous Ku-band service along the coast and in highly traveled regions like the Caribbean requires the use of multiple beams on several satellites and the related switching of transponders, frequencies and polarizations – a significant burden that makes seamless Ku-band coverage cost-prohibitive (assuming such beams are

¹⁴ *Id.* at ¶ 61.

¹⁵ The comparatively low amount of Ku-band capacity results in a higher price to access Ku-band transponders than that paid for access to similar C-band transponders. Ku-band transponders are commercially available at approximately \$4,500-5,000 per megahertz per month; C-band transponders average \$3,400-4,500 per megahertz per month. See www.vistaadvisers.com/viewpoint4.pdf (Vista Viewpoint No. 4).

¹⁶ See NPRM at ¶¶ 61-62. Boeing has secured the capacity necessary to create a worldwide network in the Ku-band. However, ESV operators cannot replicate Boeing's actions. Boeing has leased steerable Ku-band beams in order to implement its global "Connexion by Boeing" service – capacity to which only Boeing has access. Thus although Boeing secured enough Ku-band capacity for its system, such capacity would not be available to MTN and other ESV operators.

available for commercial lease or purchase in the first place). Ku-band operations are also susceptible to service outages in high rain areas, such as Florida, the tropics, and the Gulf of Mexico region, which are major areas of ESV use. Cruise ships often travel to, and oil platforms are often located in, areas labeled “high rain zone” sailing areas. In these areas, Ku-band FSS network availability percentages drop below ninety-nine percent, which compels many land-based operators to establish redundant stations at geographically diverse sites to protect against the loss of service. Unlike their land-based Ku-band counterparts, however, ESV operators cannot improve network reliability by using redundant earth stations.

B. C-Band Offers Technical Advantages Unmatched By Ku-Band.

For an ESV operator offering communications services on a global scale, use of the C-band is a necessity. C-band offers unsurpassed reliability and availability because transmissions in this portion of the spectrum do not suffer from weather-related attenuation (which diminishes availability due to the inability to employ redundant earth stations) and transponder capacity is available. In addition, C-band is the only portion of the commercially available FSS spectrum that offers sufficient bandwidth on a global basis – a distinct advantage given the high volume of voice, data and video information that flows through ESV networks on a daily basis.¹⁷ MTN itself relies heavily on the C-band, as evidenced by the 132 ESVs currently comprising MTN’s Global C-Band Network.

In contrast, dual-band operations (i.e., ESVs use of the C-band on the high seas and Ku-band closer to port) would work a considerable economic burden on MTN and other ESV

¹⁷ Unlike Ku-band, C-band offers coverage over broad areas, which permits seamless coverage over vast portions of the world’s ocean regions. Vessels equipped with C-band antennas need only re-point their antennas to the next satellite with an available C-band transponder to ensure continued broadband data transfer. C-band operational costs, consequently, are lower than Ku-band operational costs.

operators.¹⁸ Not only would combined C- and Ku-band operations entail the purchase of two separate, incompatible, and expensive platform-stabilized satellite earth stations, they would require the time-consuming and costly procedure of switching from one band to the other as their ships approached land. Moreover, dual-band operations would force ESV operators to locate space for the installation of the two earth station antennas on vessels where deck space is always scarce. Finally, dual-band operations would require separate contracts for the C- and Ku-band transponders, which would dramatically increase the cost of operations and lower the efficient use of the spectrum.¹⁹

C. Extensive ESV Use Of C-Band FSS Frequencies Since The Early 1990s Belies The Theoretical Concerns Of Interference To The FS.

MTN believes that the Commission's proposals regarding C-band are colored in significant part by a misplaced concern regarding the potential for harmful interference from ESV operations into co-primary FS operations at C-band.²⁰ MTN agrees that the prevention of the theoretical potential for such interference must be addressed in this proceeding. However, the measures taken to address that concern must be no more stringent than are demonstrably necessary to adequately protect the FS and must take the long record of ESV use of C-band – on both a coordinated and non-interference basis – into account.

In these regards, MTN emphasizes again that, in more than twelve years of ESV operations in C-band, *there have been no substantiated instances of interference from ESVs to*

¹⁸ NPRM at ¶¶ 62. The advantages that C-band has over Ku-band have prompted many ESV users to equip their vessels with C-band equipment exclusively.

¹⁹ MTN explained these facts in great detail in its responses to the NOI, MTN NOI Comments at 12-13; MTN NOI Reply Comments at 7-8, and in a series of post-NOI ex parte presentations in this proceeding.

²⁰ See NPRM at ¶¶ 43-46, 63-83.

FS stations under normal operating conditions. The dearth of such claims reflects the many measures that MTN and others have devised and implemented to keep the potential for interference to the FS unrealized.²¹ It is also uniquely reliable anecdotal evidence, as cruise ship routes are highly regular both in terms of time and path, and any interference observed would be both oft-repeated and inherently traceable.²²

MTN believes the record on this point is clear, and that the FS community, as the opponent of ESV operations in the C-band, has not met its burden under Section 7 of the Communications Act to demonstrate why such operations are inconsistent with the public interest.²³ In the absence of evidence of substantiated interference from ESV operations to FS links, and in the face of MTN's objective demonstration that the measures proposed in the NPRM overprotect (rather than adequately protect) the FS, the Commission should conclude that unduly burdening ESV operations in the C-band to preemptively address theoretical concerns regarding interference cannot be justified when balanced against the many public interest benefits that ESVs alone can provide.²⁴

²¹ See MTN NOI Reply Comments at 12-14.

²² The Commission notes that, "[i]n the past decade, terrestrial FS licensees have filed only one documented interference complaint with the Commission against MTN, the only authorized operator of ESVs in the United States." NPRM at ¶ 97. The Fixed Wireless Communications Coalition, however, maintains that the "transient nature" of an ESV-equipped ship makes tracking down and confirming the interference source "almost impossible." *Id.* In fact, the "in-motion" nature of ESV-equipped vessels is irrelevant when identifying an interference source. Vessels travel through unvarying ship lanes in and out of the same ports, thus making the identification of any ESV source of interference a routine matter. Harmful interference to FS stations, including stations located nearby port areas, almost universally comes from other FS stations.

²³ See 47 U.S.C. § 157. In the NPRM, the Commission requests "documentary evidence" that substantiates incidents of interference from authorized ESV operations to FS or any other type of operation. NPRM at ¶ 97.

²⁴ MTN previously described the many business and administrative services and passenger and crew services made possible by ESVs. See MTN NOI Comments at 5-6.

III. The Commission Should Encourage ESV Use Of The C-Bands – Subject To Rational And Meaningful Technical And Regulatory Conditions.

Given the indispensable nature of the C-band for ESVs operations, and in light of the long history of ESV/FS co-existence in that band, the overarching principle guiding the Commission's decision-making in this proceeding should be how best to accommodate ESVs in C-band. As noted, however, the proposals made in the NPRM reflect instead a strong regulatory preference for ESV use of the Ku-band over the C-band, and only grudgingly include limited C-band allocations in order to implement domestically the decisions of WRC-03.²⁵ MTN urges the Commission to reverse course and offer licensing proposals that encourage complementary ESV use of the C- and Ku-bands.²⁶

A. ESV Operations In The C-Band FSS Downlink Spectrum

MTN supports in part the Commission's proposal to permit ESVs to operate in the 3700-4200 MHz band on a strictly non-protected basis with regard to the co-primary FS as MTN cannot, consistent with decisions reached at WRC-03, claim protection on the downlink C-bands for "in motion" ESVs.²⁷ MTN disagrees, however, with the Commission's tentative conclusion that all ESV operations at 3700-4200 MHz should be on a non-protected basis.²⁸ Once a vessel

²⁵ See NPRM at ¶ 60.

²⁶ The Commission proposes to add a non-Federal Government footnote to the U.S. Table of Allocation that would require "ESV operators [to] take all practicable steps to comply with ITU Resolution 902 (WRC-03)." *Id.* at ¶ 46. MTN believes that the Commission should not include this compliance requirement in the footnote without first clarifying the requirement's intent. Because Government users would not be subject to the same compliance requirement under their proposed footnote, commercial ESV operators could be placed in the unfortunate, and certainly unintended, position of having to respond to *all* complaints of interference, whether allegedly caused by commercial or governmental entities.

²⁷ *Id.* at ¶ 44. As the Commission notes, Annex 1 to ITU-R Res. 902 (WRC-03) concerning C-band operations states that "ESVs *in motion* shall not claim protection from transmissions of terrestrial services operating in accordance with the Radio Regulations" (emphasis added).

²⁸ *Id.*

has reached a pier and is moored, it is no longer in motion, but instead has become a station in the FSS operating at a known fixed location.

The Commission recognizes that stabilized earth stations on floating oil platforms in, for example, the Gulf of Mexico are properly licensed as FSS earth stations. Similarly, an ESV-equipped vessel docked at a location that has been coordinated with the FS should not be classified as in motion – regardless of how long the vessel remains in the same location.²⁹ WRC-03 reached this same conclusion when it decided that ESVs at fixed points should be treated as “traditional” FSS stations.³⁰ Consistent with this international approach, the Commission should exclude ESVs operating at coordinated points from its definition of in-motion vessels and afford them the protections from harmful interference that coordinated FSS earth stations enjoy. As there will be numerous vessels operating ESVs over time from any given pier area, the fact that particular ships come and go does not diminish from the overall efficiency of the use of FSS spectrum at that location.

B. ESV Operations In The C-Band FSS Uplink Spectrum

With respect to C-band ESV uplink operations in the 5925-6425 MHz band, the Commission proposes to permit ESVs to communicate with FSS space stations on a non-interference basis, and offers two methods – the Non-Coordination Approach and the Coordination Approach – for licensing ESVs.³¹ Because MTN does not interfere with FS

²⁹ MTN notes that ESVs classified as fixed rather than mobile would have no adverse effect on terrestrial FS stations, because the frequencies encompassed by a fixed license would necessarily be fully coordinated with the FS. Overall efficiency would be improved because multiple ships would share the coordination, ensuring its regular use over time.

³⁰ ITU-R Res. 902 (WRC-03) recognizes that stabilized earth stations operating at a fixed point are not ESVs and should be operated under the existing regulations for FSS earth stations.

³¹ NPRM at ¶ 45.

stations and operates successfully today on an NIB without regulatory intrusion, it opposes both conceptual approaches outlined in the NPRM. Either approach would increase the current regulatory burdens on ESV operations – in some cases very dramatically – without providing any of the benefits that regulatory certainty offers. The Non-Coordination Approach is unnecessarily punitive to ESVs, and overprotects the FS. It must be rejected outright. The Coordination Approach, as proposed, suffers from the same defects as the Non-Coordination Approach, in that ESVs would be heavily burdened but still NIB. However, if the Commission were to modify the Coordination Approach to provide ESV operators with many of the same regulatory protections accorded other FSS licensees with coordinated operations, it could become a balanced and constructive regulatory scheme that fosters (without unduly constraining) ESV use of C-band while adequately protecting the FS. If the Commission cannot see fit to make the adjustments proposed here by MTN, it should abandon its C-band proposals and maintain the NIB status quo.

1. The Proposed Non-Coordination Approach Must Be Rejected.

Under the first of the two C-band licensing methods, the Commission proposes to license non-coordinated ESV operations for a two-year term on a non-interference basis and require secure real-time tracking of vessels locations and real-time FS operator access to the tracking data.³² The Commission must reject this approach outright. Limiting ESV licenses to any term less than the full 15-year term accorded other licensed earth stations would needlessly penalize ESV operators for the potential of (rather than actual) interference to FS stations. Moreover, the proposed two-year term would fail to provide the regulatory certainty necessary for the development of the ESV industry, and to spur investment in ESV companies.

³² *Id.* at ¶ 64.

Indeed, adoption of the Non-Coordination Approach would place MTN and other ESV operators in a less attractive regulatory position than they are in now.³³ MTN currently operates on a non-interference basis in the C-band, but is not subject to the long list of onerous requirements and compliance measures proposed by the Commission that even FS operators have not previously sought.³⁴ The Non-Coordination Approach also would expose MTN and others to potential abuse. The Commission proposes that an ESV operator “immediately terminate or relocate” operations within 300 kilometers of an alleged point of interference on the basis of a single interference claim that it cannot successfully resolve.³⁵ This “guilty-until-proven-innocent” requirement would force MTN to dramatically alter its operations regardless of the merit of any interference claim it may receive and undoubtedly would lead to unwarranted ESV service disruption based on frivolous and undocumented complaints.

ESV use of C-band is feasible and has a long track record that empirically proves that co-existence with the FS works. The Commission’s desire to overprotect the FS from a compatible, co-primary application of the FSS is irrational, arbitrary, and fundamentally flawed on policy and statutory grounds.

2. ESVs Operations In C-Band Should Be Authorized On A Co-Primary Basis Under A Modified Coordination Approach.

The Commission’s second licensing alternative, the Coordination Approach, would permit an ESV operator to offer service on a non-interference basis following coordination of up

³³ See *id.* at ¶¶ 63-68.

³⁴ As explained below, MTN is able to monitor ESV operations from its Network Operations Center in Florida without the need for the onerous reporting requirement proposed by the Commission. See *id.* at ¶ 65. In the unlikely event of interference, mechanisms exist to terminate interfering transmissions immediately.

³⁵ *Id.* at ¶ 67.

to 72 megahertz of uplink spectrum (36 megahertz to each of two satellites) and 72 megahertz of downlink spectrum per location.³⁶ Licenses would be issued for 15-year terms and each licensee would be required to maintain vessel tracking data for a 90-day period in lieu of real-time tracking.³⁷ The Commission appropriately refers to the Coordination Approach as “a new scenario” because, as far as MTN is aware, the agency has never before attempted to foist this inherently inconsistent concept on would-be licensees.³⁸ The premise of the Coordination Approach – i.e., that coordinated operations need to be conducted on a non-interfering basis – is both incongruous and counterproductive, as it offers ESV operators no incentive whatsoever to undergo the time and expense necessary to achieve coordination with FS stations if, following that step, they must operate in a manner that fully protects (indeed, overprotects) those very same stations. The inherent illogic of the Coordination Approach can only be undone if the Commission eschews the NIB requirement and provides ESV operators that coordinate operations with concomitant regulatory protections.

If the Commission were to accord true co-primary status to coordinated ESVs, MTN would support certain aspects of the Coordination Approach as proposed – most notably, the 15-year license term. This proposal is consistent with the full license terms provided to other earth station licensees and would provide the stable regulatory regime that ESVs require. MTN would also support the proposed 90-day data retention requirement, as this data is already maintained

³⁶ *Id.* at ¶ 69. Coordination would be conducted in accordance with Section 25.203 of the Commission’s rules.

³⁷ *Id.* at ¶ 70.

³⁸ *Id.* at ¶ 82. The Commission proposes its “new scenario” immediately following its acknowledgment that “coordination implies protection from future authorizations.”

by MTN for at least this length of time.³⁹ In addition, MTN would not oppose a reasonable restriction on ESV operations in more inland waters, such as limiting such operations to the Ku-band, provided that any such restriction does not impose undue burdens on the ESV industry.⁴⁰

In contrast, MTN cannot support any limitation on the number of FSS satellites that an ESV operator can access or on the portion of the C-band in which all ESVs must operate.⁴¹ With regard to satellite limitations, the Commission must bear in mind that ESV operators require flexibility to use whatever satellite capacity is available to them and will allow operation of the terminal within the technical limitations specified in ITU-R Res. 902 (WRC-2003) (“Resolution 902”). Should the Commission require ESVs to coordinate only to a small number of satellites, their azimuths and the portion of the visible arc they could access would be significantly limited, which would have a considerable adverse impact on the service offerings that MTN and others could offer to their cruise line customers.⁴² The Commission also should not implement a requirement that ESV operators use a contiguous portion of the spectrum because commercial availability and, indeed, protection of the FS often dictate using non-contiguous spectrum, as frequencies available for ESV use will vary from port area to port area.⁴³

With regard to C-band access, the Commission should avoid identifying a specific portion of the C-band in which ESVs must operate. Every location or port has different

³⁹ *Id.* at ¶ 70.

⁴⁰ *Id.*

⁴¹ *Id.* at ¶ 69.

⁴² To reduce the potential for harmful interference to FS operators without unduly restricting ESV flexibility, the Commission could consider limiting the arc available in a particular port or designating a range of satellites that could be used in those ports.

⁴³ NPRM at ¶ 69.

characteristics that affect ESV transmissions, and thus generically imposing limits on the portions of the spectrum available to all locations makes little regulatory sense. Indeed, minimizing the prospect of interference to FS stations from ESVs *requires* that ESV operators have the ability to access all segments of the C-band, something that MTN believes can be achieved even if the total bandwidth available in any given area is limited to 72 MHz of spectrum in each direction, per ESV network.

As to the how coordination is to be achieved, the Commission proposes a coordination process in the C-band “consistent with Resolution 902 and Recommendation 37” and requests comments on this coordination approach recommended by the WRC-03.⁴⁴ The National Spectrum Managers Association (“NSMA”) reached an agreement after several years of study on the methods and procedures for frequency clearance for ESVs. Its conclusions were communicated to the Commission by letter in 1999, which stated that the NSMA had concluded on the form and content for prior coordination notices and that the Critical Contour Point (“CCP”) method was an acceptable methodology for assessing the potential for interference to FS receivers.⁴⁵

Two outstanding issues were listed in the NSMA letter: the need to define an appropriate interference objective for ESVs and the need to establish the status of ESV licensing. The letter noted that the issue of interference objectives was being addressed by the ITU-R within WP4-9S and that the question of the status of ESV licenses was for the Commission to decide. The interests of both the FS and the FSS were taken into account in the work of the NSMA and,

⁴⁴ *Id.* at ¶ 73.

⁴⁵ Letter from M. Philip Salas, President, National Spectrum Managers Association, to Ronald T. Repasi, Chief, Satellite Engineering Branch, International Bureau, Federal Communications Commission (dated November 9, 1999).

therefore, the Commission should acknowledge that the FS agreed more than four years ago to the use of the CCP method for assessing the potential for interference from ESVs operating while in motion.

Subsequent to the NSMA letter of 1999, the ITU-R also finished work on five ESV-related recommendations, containing full details on the CCP method, the procedures for construction of a composite coordination area for ESVs in motion, and the methods for determining the potential for interference into an FS receiver operating in the shared band. The CCP method and the associated methodology developed by the NSMA were used by MTN for frequency coordination of 17 U.S. ports every six months for the three years from April of 1997 to the end of 2000 during which MTN operated under special temporary authority from the Commission.⁴⁶ Throughout this time ample frequencies were cleared for ESV operations and, significantly, not a single incident of interference resulted. Thus there is empirical and theoretical proof that the CCP method coupled with the recommendations of the NSMA and the ITU-R are sufficient to prevent interference to stations in the FS from ESVs operating while in motion.

MTN agrees that the Commission should require that the data elements used in the construction of the composite coordination area and the results of the analysis be made available to frequency coordinators for the purpose of confirming the basis and the conclusions of the analysis. However, MTN strongly urges the Commission to follow accepted practice and allow the responsible frequency coordinator to certify the results of the coordination process in a license application without the need to file all of the data underlying the process.

⁴⁶ The 17 ports are: Bremerton, WA; Everett, WA; Ft. Lauderdale, FL; Juneau, AK; Ketchikan, AK; Key West, FL; Los Angeles, CA; Mayport Naval Base in Jacksonville, FL; Miami, FL; New Orleans, LA; Norfolk, VA; Port Canaveral, FL; San Diego, CA; San Juan, PR; Skagway, AK; St. Thomas, VI; and Tampa, FL.

The Commission has a vested interest in protecting all U.S. licensees, even those that it may license outside of the 12 nautical mile jurisdictional limit. However, Resolution 902 clearly states that the minimum distance criteria is measured from the mean low-water mark of the territory of the administration and, therefore, it specifically excludes the application of this criteria in Exclusive Economic Zones (“EEZs”). Moreover, the definition of the measuring point for the minimum distance in the Radio Regulations was proposed by the United States specifically as a way to prevent any nation from extending their jurisdictional authority particularly into EEZs. Therefore, the Commission should adopt the position that the minimum distance criteria only apply to FS stations within the territory of the United States.

The Commission requests comment on whether it should apply its proposed rules to all C-band ESV operations within 300 kilometers of the U.S. coast.⁴⁷ In the *Crescomm Waiver Order*, the Commission adopted a minimum distance of 100 kilometers from the coast of the U.S. for ESVs operating in C-band without prior coordination.⁴⁸ Subsequently, the U.S. proposed 200 kilometers in contributions to ITU-R working groups and to WRC-00 and WRC-03. However, it was decided internationally and codified in ITU-R Rec. SF.1650 and Resolution 902 that the minimum distance should be 300 kilometers for C-band ESVs. This is an extremely conservative number that does not result from a technical analysis but, rather, reflects a political compromise. Studies of U.S. ports conducted within the NSMA working groups have demonstrated that there are never any cases of potential interference from an ESV more than 100 kilometers from the FS receiver. Given the long history of operations without incident of

⁴⁷ NPRM at ¶ 74.

⁴⁸ *Mobile Satellite-Based Communications Services by Crescomm Transmission Services, Inc. and Qualcomm Incorporated*, Order, 11 FCC Rcd 10944 (IB/OET 1996).

interference, MTN urges the Commission to adopt the original minimum distance of 100 kilometer given in the *Crescomm Waiver Order*, and thus avoid unnecessary computations to find non-existent interference cases with a concomitant administrative burden.

Regarding interference criteria, both the work of the NSMA and the ITU-R on the potential for interference into the FS from ESVs in motion concluded that it should be characterized as principally short-term in nature. The short-term interference criterion, therefore, should be the one adopted for assessing the potential for interference. Moreover, based on the technical analyses that have been submitted to both the NSMA and the ITU, the interference protection criteria should be in the range of -131 dBW/4kHz (the current U.S. standard for earth station coordination) to -145 dBW/4kHz (a comprise number discussed in the NSMA). ITU-R recommendations in force give a short-term objective of -131 dBW/4kHz for the protection of analog FS systems and -103 dBW/MHz for digital systems (equivalent to -127 dBW/4kHz.). However, MTN supports the fact that there are reasonable arguments to adopt a conservative short-term objective for new application and therefore, urges the Commission to adopt an objective of -145 dBW/4kHz.

C. Blanket Licensing And Application Provisions Applicable To C-Band Operations

The Commission requests comment on licensing procedures for ESVs in C-band, including the proposal to blanket license ESVs following the procedures applicable to very small aperture terminal (“VSAT”) and CSAT networks.⁴⁹ Previously in this proceeding, MTN offered the Commission its own recommendations for ESV blanket licensing (and related application

⁴⁹ NPRM at ¶¶ 84-86.

requirements)⁵⁰ because, as the Commission itself recognizes, “the number and mobility of ESV locations would make it impractical to license ESVs on a site-by-site basis.”⁵¹ Although MTN maintains that its recommendations regarding blanket licensing offer the best balance of protection to existing services and administrative efficiency, it can support the Commission’s licensing proposals with certain modifications that are detailed below.

As an initial matter, MTN supports the Commission’s proposals to adopt a minimum antenna size of 2.4 meters, a 300 gross tonnage vessel limitation for ESV operations at C-band, and standards for routine network application processing.⁵² In response to the Commission’s request, MTN also recommends a minimum ESV elevation angle of 10 degrees within the minimum distance from the U.S. coast.⁵³

For its first modification, MTN urges the Commission to reject its proposal that an ESV system be required to have in place an automatic mechanism to terminate transmissions whenever a station within that system operates outside its authorized geographic area or operational limits.⁵⁴ Contrary to what the Commission may believe, this proposal is not consistent with Resolution 902, which only stipulates that an ESV system “shall include means of identification and mechanisms to immediately cease emissions . . .” whenever a station does

⁵⁰ Letter from Raul R. Rodriguez, Counsel to MTN, to Marlene Dortch, Secretary, Federal Communications Commission, IB Docket No. 02-10 (dated August 30, 2002).

⁵¹ NPRM at ¶ 48.

⁵² *Id.* at ¶¶ 86-87, 91.

⁵³ *Id.* at ¶ 89. MTN opposes any requirement to impose minimum elevation angles of greater than 10 degrees. At 30 degrees, for example, ESV use is infeasible, as coverage would be severely curtailed, and there is no technical basis for such limitations. The recommendations developed by the ITU-R are all premised on a minimum elevation angle of 10 degrees.

⁵⁴ *Id.* at ¶ 88.

not operate within the 300 kilometer “minimum distances” from the low-water mark.⁵⁵ In any event, MTN already possesses manual and automatic shut-off capability through its Network Operations Center (“NOC”) in Miramar, Florida. All ESVs that operate within MTN’s network are monitored on a 24-hours-a-day, 365-days-a-year basis, and their emissions are controlled from the NOC. Any MTN client can obtain information regarding its system and problem resolution by placing a telephone call to the personnel on-duty in the NOC. An appropriate regulatory authority can also contact the NOC to inquire about potential interference. If it is determined that the interference is coming from a system under MTN’s control, the on-duty personnel can and will cease emissions from that unit immediately. MTN has standard escalation procedures in place for all types of incidents that the on-duty personnel use to notify and involve the appropriate MTN staff members to resolve a problem. By maintaining strict hub control, MTN can monitor, control and remotely terminate transmissions from any ESV in its network immediately, if necessary. In addition, if one of MTN’s ESV systems loses synchronization with the downlink from the satellite, exceeds certain motion limits, or falls outside of a specified range of signal parameters, it automatically terminates all emissions before any harmful interference results.

Requiring geographically-based automatic shutoff capability is not necessary, can be difficult to implement, and is an unreliable substitute for the around-the-clock staffed NOC approach that MTN uses. ESVs will operate in areas where no coordination is required (e.g., in areas where the station is beyond the minimum coordination distance from any FS receiver, but within the minimum distance from the low-water mark of the U.S. coastline). Surely, the

⁵⁵ ITU-R Res. 902 (WRC-03), Annex 1, Paragraph 6.

Commission would not want to curtail these uses and impose unnecessary burdens on the operator. Automatic shut-off capability could also backfire in an emergency situation. The types of human and automatic capabilities MTN currently employ through its NOC are all that is required here.

Second, MTN opposes the Commission's C-band blanket licensing rule proposals that would require an accurate list of the vessels on which the ESVs are located; an itinerary for each of these vessel; operational areas where the proposed ESVs will operate; and an annual updated list of all ports, harbors, shipping channels and sea lanes where any ESV associated with the network may operate.⁵⁶ This information is unnecessary for the processing and grant of an ESV application. Because the hub licensee will have full responsibility for ensuring the compliant operation of its associated ESVs, all that is needed for the application is the technical details on the ESV stations. In addition, the information about a particular ship may change numerous times within a year, based on seasonal variations and passenger demand. Requiring such information in the application would be both burdensome to the applicant and virtually useless. If needed, the Commission could instead require that the NOC maintain this information on an accurate, up-to-date basis.

IV. A Comprehensive ESV Regulatory Framework Requires Ku-Band Licensing In Addition To C-band Licensing.

MTN has shown above that ESV use of the C-band FSS frequencies is necessary to provide the level of broadband communications that its customers have come to expect. In this section, MTN emphasizes that while use of the Ku-band spectrum is *not* a replacement or substitute for C-band, it nevertheless is a vital complement to ESV C-band operations. As MTN

⁵⁶ NPRM at ¶ 65.

explained in response to the NOI, the Ku-band “should be open to ESVs where commercially available and technically appropriate because, in certain instances, Ku-band can alleviate coordination difficulties that may arise with the use of the shared C-band.”⁵⁷

In the NPRM, the Commission proposes to adopt rules that would authorize ESVs to operate on a primary basis in the Ku-band for a license term of 15 years, with the stated goal of “encourag[ing] ESV use of the Ku-band over the C-band.”⁵⁸ For the reasons discussed above, MTN disagrees with the Commission’s preference for Ku-band, but nevertheless supports Ku-band licensing as proposed in the NPRM. Indeed, the Ku-band approach should be implemented generally for C-band ESVs as well.

A. The Commission’s Segment-Specific Ku-Band Proposals

In its NPRM, the Commission divides the Ku-band spectrum into four discrete segments, 11.7-12.2 GHz, 14.0-14.2 GHz, 14.2-14.4 GHz and 14.4-14.5 GHz, and requests comments on a variety of issues related to each. Regarding Ku-band operations in the 11.7-12.2 GHz band, the Commission seeks comment on how to define an “in-motion” vessel in light of the language in Annex 1 to Resolution 902 providing that ESVs in motion shall not claim protection from transmissions of terrestrial services in the 10.7-12.75 GHz range.⁵⁹ As noted in the C-band discussion above, MTN believes that “in-motion” should be defined as any situation where the vessel on which the ESV terminal is located is not moored at a known fixed point. Once the

⁵⁷ MTN NOI Comments at 11.

⁵⁸ NPRM at ¶ 29.

⁵⁹ *Id.* at ¶ 32.

vessel is moored, the ESV becomes a conventional FSS earth station that is entitled to all of the concomitant FSS protections and status.⁶⁰

The Commission requests comment on its proposal to protect the secondary Federal Government space research service allocations in the 14.0-14.2 GHz band through coordination with the National Telecommunications and Information Administration (“NTIA”) Interdepartment Radio Advisory Committee (“IRAC”).⁶¹ MTN recognizes the need to protect this service and has already acknowledged in a letter filed with the Commission that it will do so using a reverse-band transmission scheme.⁶² In light of MTN’s pledge to protect government users and the small portion of the band in which these users operate, the added protection of NTIA approval would only be necessary when the route of the ESV would take it within the minimum coordination distance for the relevant portion of the 14.0-14.2 GHz band.

The Commission next asks whether the secondary Mobile Satellite-Service (“MSS”) operations in the 14.0-14.2 GHz portion of the Ku-band and the presence of aeronautical MSS operations there raise any issues.⁶³ MTN believes that such operations pose no concern, as ESV operations must occur under the primary FSS allocation within the limitations set forth in Resolution 902. Inasmuch as ESV operations in the FSS are functionally equivalent to the

⁶⁰ MTN has no comment on the secondary use of the 11.7-12.2 GHz band by the Local Television Transmission Service other than to state that there is no reason why ESVs, as an application in a primary service, need to provide any protection to a secondary service. *Id.* at ¶ 31.

⁶¹ *Id.* at ¶34.

⁶² Letter from Raul R. Rodriguez, Counsel to MTN, to Marlene Dortch, Secretary, Federal Communications Commission, File No. SES-LIC-20011130-02559 (dated November 22, 2002). MTN notes for the record, however, that there are currently only two government space research earth stations in use – and they receive only in the 14.0-14.05 GHz band, not 14.0-14.2 GHz.

⁶³ NPRM at ¶ 35.

conventional FSS operations to which MSS is already secondary, no different treatment is needed for ESVs in the FSS.

MTN supports the Commission's proposal, consistent with the outcome of WRC-03, to make the full 14.0-14.5 GHz segment of the Ku-band available to ESVs.⁶⁴ ESVs need access to the full Ku-band band to allow for optimal commercial flexibility and to provide access to non-shared frequencies to other countries and regions throughout the world. MTN also supports the Commission's proposal to require that ESVs operating in the 14.47-14.5 GHz band avoid harmful interference to stations of the radio astronomy service at 13 observatories in the United States and its possessions.⁶⁵ MTN is prepared to coordinate with the IRAC, if its operations ever occur anywhere near the protected radio astronomy sites.⁶⁶

B. Operational Considerations For ESV Networks In The Ku-band

The Commission seeks comment on a series of proposals applicable to all ESV operations at Ku-band. Regarding licensing, MTN supports the proposal to blanket license Ku-band operations and to provide such licensing of Ku-band ESV networks for 15-year terms, as this is identical to the term applied to other licensed networks.⁶⁷ MTN does not believe, however, that it is necessary to limit Ku-band ESV operations to vessels that are 300 gross tons or larger.⁶⁸ MTN supports authorizing Ku-band ESV operators to operate with any U.S.-license

⁶⁴ *Id.* at ¶ 40.

⁶⁵ *Id.* at ¶ 39.

⁶⁶ *Id.*

⁶⁷ NPRM at ¶¶ 48, 58.

⁶⁸ *Id.* at ¶ 54.

satellite and non-U.S. satellites on the Permitted List and recommends a minimum ESV elevation angle of 10 degrees.⁶⁹

MTN also offers qualified support of the Commission proposal to require a new ESV applicant seeking authority to operate at 14.0-14.5 GHz that exceeds the EIRP density thresholds to demonstrate the applicant's ability to operate without causing interference to adjacent satellite using the Sharp, Adjacent Satellite Interference Analysis ("ASIA") program.⁷⁰ While MTN has no objection to providing the required ASIA showing, it strongly opposes the related requirement that an ESV operator provide proof by affidavit that the proposed operation has been coordinated successfully with adjacent satellite licensees that are two degrees removed in the GSO orbit from the satellite used by the ESV operator.⁷¹ Any requirement that an ESV applicant supply an affidavit from an adjacent satellite operator – or indeed that the applicant attest to anything more than that its ESV operations are within the four corners of the host satellite's coordination agreement – would be unworkable. An adjacent satellite operator with which the ESV applicant lacks a direct contractual relationship would have no incentive to cooperate with the ESV applicant. Indeed, having not sold the capacity itself, the adjacent satellite operator has every incentive not to cooperate. The affidavit proposal will cause huge problems while producing no benefits.

⁶⁹ *Id.* at ¶¶ 47, 53.

⁷⁰ *Id.* at ¶ 51. A similar requirement has been proposed for ESV operations at C-band. *Id.* at ¶ 86.

⁷¹ *Id.* (citing Section 25.134(b) of the Commission's rules). The Commission states in its narrative that it is proposing an affidavit requirement, yet the rule proposals in Appendix A to the NPRM contain no such requirements. Without a proposal, it is unclear whether the contemplated affiant would be the ESV applicant or the adjacent satellite operator. To the extent the Commission proposes an affidavit requirement in connection with C-band applications, MTN opposes that proposal as well.

Moreover, the nature and extent of Inter-system Coordination Agreements (“ISCs”) between satellite operators are held in commercial confidence and, therefore, an ESV applicant would not know what specific technical limits, beyond the earth station performance requirements of Part 25 of the Commission’s rules, are imposed on terminals operating with a specific satellite. The correct way to ensure that any earth station will not cause interference to an adjacent satellite is through demonstrated compliance with Part 25 *and* the technical requirements agreed to in the service contract with the operator of the satellite through which the ESV is communicating. These technical requirements are designed to ensure that all earth stations communicating with that satellite are in compliance with the operating parameters of the satellite and the ISCs with the operators of adjacent satellites. MTN has previously filed with the Commission copies of technical annexes of some satellite service contracts and more recently has given details of system operation that demonstrate the ways in which an ESV can meet the requirements placed on earth stations for exactly this purpose.⁷² Satellite operators also monitor in real-time the performance of all earth stations using their satellites and are quick to inform their clients if any earth station communicating with one of their satellites is operating outside the technical limitations. MTN considers this existing methodology to be a much more effective and sound method for preventing interference to adjacent satellites than the method of notification proposed by the Commission.

⁷² Letter from Raul R. Rodriguez, Counsel to MTN, to Marlene Dortch, Secretary, Federal Communications Commission, File No. SES-LIC-20011130-02559 (dated January 16, 2004), as amended by Letter from Raul R. Rodriguez to Marlene Dortch (dated February 23, 2004).

The Commission next seeks comment on possible methods that would prevent interference to adjacent satellites from ESVs in-motion.⁷³ The method that MTN employs with success involves the use of stabilized antenna systems for ESVs that operate with $\pm 0.2^\circ$ pointing accuracy for the exact position of the satellite through which the ESV is communicating. The ESV antenna controller can detect within 100 milliseconds if the pointing error should ever exceed 0.5° and cease transmissions immediately. The controller suppresses transmissions until the pointing accuracy is back within $\pm 0.2^\circ$. The stabilized antenna systems used by MTN also employ closed-loop servo systems and highly accurate sensors to continuously monitor the antenna's position in inertial space. The servo mechanism keeps the antenna pointing within $\pm 0.1^\circ$ RMS, $\pm 0.2^\circ$ peak.

The Commission also requests comment on whether transmitter power control for Ku-band ESVs should be required.⁷⁴ MTN supports adoption of such controls, and notes that its hub station already exercises automatic power control over any Ku-band ESV within the MTN network. On the other hand, MTN does not believe that protection of adjacent FSS systems require a minimum antenna diameter of 1.2 meters. Instead, MTN supports the routine processing of Ku-band ESV applicants that specify a minimum antenna diameter of 1.2 meters,⁷⁵ but would allow smaller antennas upon the filing of an initial lead application that includes all technical analyses required to demonstrate that unacceptable interference will not be caused to any affected adjacent satellite operator.

⁷³ NPRM at ¶ 53.

⁷⁴ *Id.*

⁷⁵ An MTN Ku-band ESV antenna with aperture sizes of 1.2 meters or larger in diameter meets or exceeds the 29-25 log θ requirements of the current two degree spacing requirements of the Commission.

For the reasons provided in Section III.C above with regard to C-band, MTN opposes the Commission's proposal that ESV systems be equipped with automatic mechanisms to terminate transmissions whenever the station operates outside its authorized geographic area or operational limits.⁷⁶ If anything, the automatic-shut off proposal is even more inapplicable to Ku-band because no frequency coordination is proposed or required in that portion of the spectrum. For similar reasons, MTN also opposes any license conditions applicable to coordination in the Ku-band with respect to foreign administrations.⁷⁷

V. Real-Time Tracking Of ESV-Equipped Vessels Should Be Implemented Only If Security Is Not Compromised And Existing Interference Resolution Mechanisms Are Employed.

The Commission requests comment on whether, and under what conditions, real-time tracking of ESVs in both the C- and Ku-bands is necessary.⁷⁸ MTN, which currently tracks all ESVs in its network in real-time, supports ESV tracking, *provided* that safeguards are put in place to ensure that tracking data, for security reasons, are not made available to unauthorized persons or entities.⁷⁹ MTN is able to track each of the ESVs that comprise its network from its NOC in Florida, and responsible public safety authorities, the Commission, or authorized representatives of the licensees in shared bands could have ready access to this data in a timely and expeditious manner upon authenticated request. This exchange of information could be accomplished with little or no involvement on the part of the Commission, through the usual

⁷⁶ *Id.* at ¶ 54.

⁷⁷ *Id.* at ¶ 57.

⁷⁸ *Id.* at ¶ 95.

⁷⁹ For this reason, MTN opposes the idea of providing tracking data on password-protected web sites. *Id.* Passwords can too easily fall into the hands of persons without proper authority to access the data. MTN, however, does not oppose the Commission's proposal to require the retention of this tracking data for 90 days.

interaction between frequency coordinators representing the two systems, or by having the frequency coordinator representing the FS system contact the MTN directly. This approach would build on the existing method of interference resolution that the FS and FSS communities have practiced, with success, for years. In MTN's opinion, there is no reason to stray from this proven method.

VI. Section 306 Of The Communications Act Does Not Bar The Licensing Of ESVs On Foreign-Flagged Vessels.

The Commission maintains that Section 306 of the Communications Act of 1934, as amended, precludes licensing of ESVs which are on board vessels of foreign registry, and seeks comment on how the Commission should treat ESVs that are located on foreign-flagged vessels.⁸⁰ MTN disagrees with the Commission's legal premise. Section 306 provides that:

Section 301 of this [Act] shall not apply to any person sending radio communications or signals on a foreign ship while the same is within the jurisdiction of the United States, but such communications or signals shall be transmitted only in accordance with such regulations designed to prevent interference as may be promulgated under the authority of this [Act].

47 U.S.C. § 306. When the Commission states that Section 306 prohibits the licensing of earth stations on ships of foreign registry, it does not tell the entire story. First, the statute mandates that transmissions from ESVs on foreign-registered ships must be in accordance with whatever rules the Commission adopts for the prevention of interference from ESVs on U.S.-flagged vessels. Second, the statute does not, on its face, prohibit the licensing by the Commission of ESVs on foreign ships; it says instead that the requirement of licensure in Section 301 does not apply. It seems that the Commission can adopt rules that, for example, "register" or "certificate"

⁸⁰ NPRM at ¶ 101.

the compliance of ESVs on foreign-flagged vessels within the jurisdiction of the U.S. without running afoul of the language of Section 306. Potentially, ESVs may also be able to be licensed by the Commission for use on foreign ships, when those ships are outside the U.S. territorial waters (i.e., 12 nautical miles), provided that they are not within the territory of the flagging administration.

The implications of this are several, and all support the VSAT model MTN is promoting for the regulation of ESVs. Clearly, the Commission can license “ESVSAT” networks (U.S. hub, multiple remotes in non-specific locales). The Commission can, consistent with Section 306, prohibit ESVs (whether on U.S. or foreign ships) from transmitting in violation of the technical standards it establishes for ESV use. The Commission also can, consistent with Section 306, direct that hub stations communicating with ESVs (whether on U.S. or foreign ships) communicate only with those that meet the Commission’s requirements for ESV transmissions within the U.S.

In short, Section 306 provides the Commission with the right and obligation to control radio frequency emissions from earth stations on foreign ships that ply U.S. waters. One way to do this is to direct that only those stations of a specific type that are associated with a U.S.-licensed ESV hub can transmit in C- and Ku-band while within U.S. jurisdiction. Anything else can and should be ordered to operate on a non-interfering, non-protected basis under No. 4.4. of the ITU Radio Regulations.

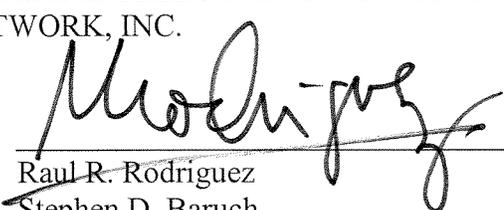
VII. Conclusion

For the foregoing reasons, MTN urges the Commission to reject those proposals advanced in the NPRM that overly protect the FS at the expense of ESVs, and to adopt instead,

consistent with the comments herein, rules that equitably accommodate use of ESVs in FSS networks while adequately protecting the legitimate interests of the FS.

Respectfully submitted,

MARITIME TELECOMMUNICATIONS
NETWORK, INC.

By: 

~~Raul R. Rodriguez~~

~~Stephen D. Baruch~~

Philip A. Bonomo

Erin E. Kucerik (Admitted in FL only)

Leventhal Senter & Lerman PLLC
2000 K Street, NW, Suite 600
Washington, DC 20006
(202) 429-8970

February 23, 2004

Its Attorneys