BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in Bands Shared With Terrestrial Fixed Service	)	IB Docket No. 02-10
	)	
	)	

To: The Commission

REPLY COMMENTS OF MARITIME TELECOMMUNICATIONS NETWORK, INC.

MARITIME TELECOMMUNICATIONS NETWORK, INC.

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SUMMARY

With one exception, the comments filed in response to the Notice of Inquiry ("NOI") support the adoption of a regulatory regime that will provide stability to the vital operations of satellite earth stations on board vessels ("ESVs") in conjunction with fixed-satellite service ("FSS") networks, while protecting the legitimate interests of the fixed service ("FS") in the C-band. Only the Fixed Wireless Communications Coalition ("FWCC") opposes the reasonable accommodation of ESVs – a position based upon its unfounded concern regarding the theoretical (rather than actual) threat of ESV interference to terrestrial FS stations. Given the absence of any real threat to the FS, Maritime Telecommunications Network, Inc. ("MTN") urges the Commission to reject FWCC's overly burdensome regulatory approach and commence immediately a rule making proceeding along the lines advanced by MTN and the other parties to this proceeding.

Nearly every commenter confirms the indispensable nature of ESV-based services, noting in particular how no other service – including Inmarsat's service at L-band – can provide the same wide range of voice, video and data communications at sea. The critical importance of ESVs to the daily operations of cruise lines and other maritime applications prompts these commenters to support a regulatory regime that replaces the uncertainty of STAs and waivers with the long-term stability of ESV licensing. MTN agrees, although it believes that the status quo is preferable to a rigid licensing scheme that overly burdens or unduly restricts ESVs.

The commenters overwhelmingly identify the FSS C- and Ku-bands as the most appropriate bands for ESVs. The mobile-satellite service ("MSS") bands are an unsuitable choice for exclusive ESV use principally because of the bands' lack of bandwidth. While the MSS bands may be the "technology of choice" for certain low capacity applications, they cannot support the broadband needs of cruise line operators and others dependent on high data transfer

capabilities. The commenters also exhibit broad-based opposition to FWCC's proposal requiring dual-band ESV operations, which many correctly see as commercially infeasible.

While no commenter has yet had the opportunity to address directly the proposed regulatory approaches offered by MTN in its comments, the comments do lend support to the broad regulatory concepts advanced by MTN. Hughes Network Systems, for example, calls for blanket licensing as part of a VSAT network in the Ku-band. MTN supports this approach, and notes that VSAT-like licensing could also be extended to operations in the C-band. In addition, all commenters that weighed in on the issue of "receive only" ESV operations oppose that proposal as completely inadequate for the intended application of ESVs, and thus support MTN's assertion that such a requirement would eviscerate ESV operations.

In contrast to all others parties to this proceeding, FWCC recommends the banning of certain ESV operations or the imposition of "rigorous" licensing restrictions that, in effect, would render ESVs useless. FWCC's licensing approach has no technical basis, however, given the lack of any substantiated incident of ESV interference, including FWCC's own allegations of interference in Alaska and Newport News. As a result, its comments are *not* an attempt to protect the genuine interests of the FS, but rather are an attempt to forestall the future licensing of ESVs. Its belated attempt to develop a record in support of the Newport News allegation also has suspect motives, as it is clearly calculated to influence the NOI rather than to document a legitimate ESV-based interference concern.

FWCC would have the Commission prohibit ESVs from operating while "in motion" in the C-band when ESV-equipped ships are close to the U.S. coastline. This proposed restriction lacks justification because, contrary to FWCC's comments, ESVs do not present a genuine risk to terrestrial FS operations and their mobile nature does not complicate interference detection and avoidance. Similarly unavailing are FWCC's claims that ESVs must be authorized on a special temporary, developmental or experimental basis only, and that the mobile (while at sea)

and temporary fixed (while docked) nature of ESV stations do not conform to the definition of FSS earth stations.

Likewise, FWCC's proffered licensing conditions cannot be justified on technical grounds. The proposal to prohibit C-band ESVs installed on foreign-flagged vessels from transmitting near the U.S. coastline unless the nation of registry first enters into a bilateral agreement is unnecessary, given the more efficient ways that exist to achieve the same interference-avoidance objectives. FWCC's recommendation to install an automatic shut-off mechanism on ESV-equipped vessels is similarly redundant, because of the ability of the gateway earth station operator to monitor, control and remotely terminate transmissions from any ESV in its network.

The Commission should reject FWCC's request to establish a minimum antenna elevation angle coordinated to a specific satellite. This approach is unworkable because ESVs need the flexibility to access any satellite available to them. The recommendation to require each ESV operator to maintain an Internet-accessible list of ESV stations connected to its network is also flawed, because it would impose an unnecessary burden on operators and, more importantly, would pose a significant security risk to thousands of passengers and crew members if ship positioning is made public.

FWCC advocates an overly protective distance from shore of 300 kilometers beyond which unacceptable interference from ESVs should not be possible. Other commenters favor a more reasonable distance from shore, such as 100 kilometers, which was the distance stipulated by the Commission in a waiver granted to MTN in 1996. MTN believes a much shorter distance would be adequate to protect the interests of the FS. MTN and others also disagree with FWCC's call for "relatively short" licensing terms for ESVs. Terms of less than the full 15 years accorded to all other earth station licensees would undermine the stable regulatory regime that ESVs require, and would also stifle investment in the ESV industry.

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REPLY 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 replies to the comments filed regarding the Commission's Notice of Inquiry ("NOI") in the above-captioned proceeding.[1]

I. Introduction

MTN notes that, with one exception, the commenters in this proceeding support the adoption of a regulatory regime that will provide stability to the operations of satellite earth stations on board vessels ("ESVs") in conjunction with fixed-satellite service ("FSS") networks while protecting the legitimate interests of the fixed service ("FS") in the C-band. These commenters correctly recognize the critical nature of the services that ESVs alone are able to provide, and which have become essential to the successful operations of cruise lines and other maritime applications. Only the Fixed Wireless Communications Coalition ("FWCC") opposes this majority viewpoint by favoring instead limited ESV operations or, alternatively, the

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[1] *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in Bands Shared With Terrestrial Fixed Service*, Notice of Inquiry, IB Docket No. 02-10 (released February 4, 2002) ("NOI").

imposition of licensing conditions so restrictive that they would effectively preclude ESVs.[2] As shown below, however, FWCC's position is based on a concern regarding the potential of interference from ESVs to terrestrial FS stations operating in the shared C-band that more than 10 years of ESV operations have proven to be unfounded. As MTN and others explained in their comments, that potential is more *theoretical* than *actual*.

Thus, it is no surprise that, in response to the Commission's specific request for comment on whether existing MTN systems have in fact caused interference to other operations,[3] FWCC had nothing significant to offer. It only managed to resurrect a prior allegation of interference already demonstrated by MTN to be baseless, and to provide "another possible incident" of interference alleged to have occurred in the Newport News area that it speculates – without any evidence – was related to an unnamed ESV in the area.[4] Certainly, if this is the extent of the evidence of ESV interference that the FS industry in the heavily populated C-band can muster, the actual risk of interference must, by any reasonable standard, be considered remote to the extreme.

MTN understands the importance of protecting the FS in bands shared with ESVs, and reiterates its desire to affect such protection through whatever regulatory regime the Commission ultimately adopts. The overly restrictive regulation of ESVs favored by FWCC, however, has no technical basis, and cannot be rationally justified given the severe consequences such regulation would have on existing and future ESV-based operations. In light of the overwhelming support demonstrated by the commenters for the reasonable accommodation of ESVs, and the clear lack of evidence supporting the level of FS protection recommended by FWCC, MTN urges the

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2 *See* Comments of the Fixed Wireless Communications Coalition, IB Docket No. 02-10 (filed May 10, 2002) ("FWCC Comments").

3 NOI at ¶ 30.

4 FWCC Comments at 4 and n.5. As explained below, neither of these allegations of interference has merit. *See* Section IV.A.1 *infra*.

Commission to commence immediately a rule making proceeding along the lines advanced by MTN and others who seeks to establish a regulatory environment that fairly regulates the use of ESVs in FSS networks while ensuring the adequate protection of the FS.

II. The Commenters Confirm The Vital Nature Of ESV-based Services, And Overwhelmingly Support Adoption Of A Stable Regulatory Regime For ESVs In The FSS C- and Ku-bands.

In its comments, MTN explained how, over the past decade, ESVs have fulfilled the burgeoning demands for telecommunications services and bandwidth of cruise line operators and their passengers, as well as those of other maritime applications, in a cost-effective, spectrum-efficient manner not otherwise possible through alternative services.[5] The overwhelming majority of commenters emphatically agree.

A. ESVs Provide A Critical Service, The Importance Of Which Necessitates A More Stable Regulatory Regime.

Nearly every party that submitted comments in response to the NOI confirmed the indispensable nature of ESV-based services. Inmarsat Ventures plc ("Inmarsat"), the only global provider of L-band maritime communications in the mobile-satellite service ("MSS") bands, states that its ESV-based service in the C- and Ku-bands "provides an important supplement to the 'traditional' MSS services provided by Inmarsat at L-band" because "additional service offerings are constrained by bandwidth limitations of the MSS frequency bands."[6] Hughes Network Systems, Inc. ("Hughes") notes the "substantial customer interest in [ESV] applications," and that development of ESV-based services will facilitate communications and data transfer that are "both vital and valuable to ships, crews and passengers."[7] Intelsat Global

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[5] Comments of Maritime Telecommunications Network, Inc., IB Docket No. 02-10, at 4-7 (filed May 10, 2002) ("MTN Comments").

[6] Comments of Inmarsat Ventures plc, IB Docket No. 02-10, at 2 (filed May 10, 2002) ("Inmarsat Comments").

[7] Comments of Hughes Network Systems, Inc., IB Docket No. 02-10, at 1 (filed May 10, 2002) ("Hughes Comments").

Service Corporation ("Intelsat") likewise observes that ESV-based services "supply[] valuable communications to ships" at a "reasonable cost."[8]

From its vantage point as the association representing the interests of 16 passenger cruise lines operating worldwide, the International Council of Cruise Lines ("ICCL") states that only ESVs are capable of providing a wide range of services to "satisfy the demands of a sizeable market – namely, the more than 200,000 passengers and crewmembers onboard ESV-equipped cruise ships at any given time."[9] The Satellite Industry Association ("SIA") agrees, noting that "[c]rews and passengers need – and have come to expect – the full range of voice, video and data communications that they enjoy on land."[10] SIA also notes the spectrum efficiency possible with ESVs, which put to use otherwise fallow spectrum covering the world's oceans.[11] Maritime Communications Services, Inc. ("MCS"), an ESV service provider, states simply that ESVs have become an "essential existing service."[12]

Given the critical importance of ESVs to the daily operations of cruise lines and other maritime applications, most commenters urge the Commission to adopt a regulatory regime that provides for long-term regulatory stability. Hughes, for example, believes that the "time is ripe for the regularized licensing of ESV services."[13] SIA and Intelsat maintain that ESV operations conducted pursuant to special temporary authority ("STA") are not a long-term answer to the

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8 Intelsat Global Service Corporation Comments, IB Docket No. 02-10, at 1-2 (filed May 10, 2002) ("Intelsat Comments").

9 Letter from J. Michael Crye, President, International Council of Cruise Lines, to Marlene Dortch, Secretary, Federal Communications Commission, IB Docket No. 02-10, at 1 (dated May 9, 2002) ("ICCL Comments").

10 Comments of the Satellite Industry Association, IB Docket No. 02-10, at 1 (filed May 10, 2002) ("SIA Comments").

11 *Id.* at 3.

12 Comments of Maritime Communications Services, Inc., a Subsidiary of Harris Corporation, IB Docket No. 02-10, at 3 ("MCS Comments").

13 Hughes Comments at 2.

question of ESV authorization, and instead support a licensing approach that is "stable" and "predictable."[14] The Boeing Company concurs, favoring "normalized licensing processes to facilitate long-term and international ESV operations."[15]

MTN agrees that a stable regulatory environment is essential if the ESV industry is to continue to meet the expanding needs of its user public. Operations conducted pursuant to STAs and waivers have several critical shortcomings, including the obvious uncertainty resulting from authorized operations that may not be renewed or which can be revoked at anytime. STAs also impose significant burdens on ESV service providers, by requiring the filing of renewal applications and the coordination of operations every six months. At some seaports, the expense associated with renewal and coordination every six months would easily exceed an ESV service provider's revenues derived from that port.

MTN believes that implementing a stable regulatory regime for ESVs on an expedited basis should be a Commission priority. Indeed, prompt Commission action leading to the definitive authorization of ESVs will establish the type of "regulatory certainty" that helps promote investment in and growth of the ESV industry. [16] Thus, MTN believes that some context needs to be added to MCS's position that it is "premature" to adopt rules addressing the licensing of ESVs.[17] While MCS is certainly correct that there is no evidence of interference to the FS that could possibly form the basis for any burdensome regulation of ESVs, it does not fully account for the importance to the investment community of formal Commission recognition

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[14] SIA Comments at 2; Intelsat Comments at 2. *See also* ICCL Comments at 2 (supporting Commission's efforts to provide "a more stable regulatory environment for ESVs").

[15] Comments of the Boeing Company, IB Docket No. 02-10, at 3 (filed May 10, 2002).

[16] Promoting investment in the ESV industry also requires license terms of sufficient length to ensure industry stability. SIA Comments at 2 (recommending "a license term that is sufficiently long to spur investment in [the] underutilized [ESV] resource."). *See* Section V *infra.*

[17] MCS Comments at 1.

that ESVs appropriately operate through C- and Ku-band FSS networks. To the extent that MCS is arguing that maintenance of the status quo preferable to a rigid licensing scheme that imposes burdens and restrictions on ESVs that are not commensurate with the decade-long history of no harmful interference from routine ESV use at C-band to co-frequency FS networks, MTN certainly agrees.[18]

B. The FSS C- and Ku-bands Are The Most Appropriate Bands For ESVs.

As to the most appropriate bands for ESV operations, MTN and every other commenter who addressed that issue believe that the MSS bands are a clearly unsuitable choice for exclusive ESV use, citing in particular the bands' inadequate bandwidth. In lieu of the frequency bands allocated to MSS, the consensus view is that ESVs can best be accommodated in – as at present – the FSS allocations in the C- and Ku-bands.

Inmarsat, for example, states that ESVs operating in the FSS bands have a higher capacity per terminal than MSS operations in the L-band, thus enabling faster data communications.[19] It concludes that the MSS bands cannot accommodate the high bandwidth requirements of ESVs, and therefore are an inappropriate choice for ESV operations.[20] This is so notwithstanding the fact that ships over 300 gross tons are required under the International Convention for Safety of Life at Sea to maintain MSS access through Inmarsat. ICCL and Hughes similarly observe that the types of applications made possible by ESV FSS networks cannot be met in the MSS bands.[21] SIA believes that the current regulatory regime "artificially

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18 *See* MTN Comments at 19.

19 Inmarsat Comments at 3.

20 *Id.* at 4.

21 ICCL Comments at 2 (noting that Inmarsat "lacks the bandwidth necessary to support many broadband services, and otherwise cannot compete with ESVs on a cost basis"); Hughes Comments at 1. Hughes limited its comments to the licensing of ESVs operating in the Ku-band.

discourages the use of FSS satellites for maritime services."[22] It then suggests that the Commission establish a regime that makes it possible to use both MSS and FSS systems, believing that the marketplace should determine which type of system is optimal for particular service needs.[23]

MTN agrees with SIA that there are certain maritime communications applications for which the lower capacity MSS bands are the "technology of choice." Importantly, allowing users with low capacity needs to access the MSS bands will serve as an effective check on the possible proliferation of ESV operations at C-band. At the same time, however, and as SIA recognizes, the low capacity architecture of MSS cannot possibly serve the broadband needs of cruise line operators and others dependent on high data transfer capabilities.[24] Instead, these customers require access to the broadband ESV networks of MTN and others.

C. Mandated Dual-band Operations Are Unworkable And Should Not Be Considered.

While there is broad-based support for the complementary operation of ESVs in the C- and Ku-bands, there is no basis for FWCC's proposed requirement of dual-band ESVs.[25] Inmarsat rejects FWCC's approach outright because it believes that the mandatory deployment of dual-band ESV operations is not commercially feasible.[26] MCS agrees, noting that imposing a dual-band requirement "would foreclose most ESV service."[27] While Intelsat adopts a more

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22 SIA Comments at 2.

23 *Id.*

24 *Id.*

25 FWCC Comments at 6-7 (urging the Commission to require ESV use of Ku-band frequencies in coastal areas and to limit ESV use of the C-band to the high seas).

26 Inmarsat Comments at 5 (noting that mandatory dual-band operations would significantly increase the cost of service because it would require the lease of redundant satellite capacity in coastal areas).

27 MCS Comments at 4 (noting that mandatory dual-band operations are not feasible due to such factors as deck space constraints, excessive and duplicative spectrum, and operational complexity).

measured position, it only goes as far as indicating its belief that dual-band operations "*may* be used as an option for ESVs" where C-band is heavily used by terrestrial FS stations.[28]

MTN agrees with Inmarsat and MCS that mandatory dual-band operations do not take into account the technical and economic burdens that such operations would place on ESV licensees.[29] It further believes that dual-band operations should be avoided for a more fundamental reason: Because there is no credible evidence of interference from ESV-equipped ships using C-band, even when sailing close to shore in areas with heavy terrestrial FS use, there is simply no justification to compel such ships to use the frequencies of the Ku-band, which are technically inferior to and commercially less available than the C-band frequencies.[30]

On a related point, FWCC is plainly wrong when, in its comments, it claims that MTN currently offers dual-band technology.[31] MTN can *convert* some C-band operations to Ku-band operations (and vice versa), but does so only on an infrequent basis and under extraordinary circumstances because of the several hours it takes to affect such a conversion. In contrast, a true dual-band system of the type envisioned by FWCC would operate in both the C- and Ku-bands simultaneously, or would readily switch from one band to the other. This flexibility, however, would come at a prohibitively high cost – namely, twice the expenditure on space segment and almost twice the investment in satellite antenna and associated electronics. Thus, for reasons MTN provided in its comments, dual-band operations cannot be mandated without severe cost and coverage penalties that are simply not warranted by the facts.[32]

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28 Intelsat Comments at 2 (emphasis added).

29 MTN Comments at 13.

30 *See id.* at 12 (addressing the technical and commercial limitations of ESV operations at Ku-band).

31 FWCC Comments at 7.

32 MTN Comments at 13.

III. There Is Ample Support Among The Commenters For The Regulatory Approach Advanced By MTN In Its Comments.

In its comments, MTN offered two possible licensing approaches that could achieve a stable regulatory regime for ESVs: the "dockside out" model, which would entail the licensing of specific dock areas; and the "VSAT" model, which would involve the licensing of integrated networks consisting of technically equivalent stations associated with large gateways that control their operations.[33] As an alternative to licensing, MTN also noted that ESVs could continue to operate, as they do today, on a strictly non-interference basis without FCC authorization – provided the Commission formally recognizes this unlicensed approach.[34] MTN stated that any of these approaches, if implemented, would be compatible with the ESV sharing scheme now being finalized within the ITU-R.

While no commenter has yet had the opportunity to address MTN's regulatory approaches directly, many of the comments do lend support to the broad regulatory concepts advanced by MTN. Hughes, for example, supports a Ku-band regime that allows for blanket licensing as part of a VSAT network.[35] MTN concurs, and notes that VSAT-like licensing could also be extended to operations at C-band under the "streamlined licensing" approach adopted by the Commission in the order authorizing CSAT networks.[36]

Intelsat recommends that the Commission license all ESV stations as being within the FSS network under Part 25 of the Commission's rules, with appropriate sections added to Part 25 to include any special technical and operational requirements to ensure proper ESV operation.[37]

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33 *Id.* at 14-18.

34 *Id.* at 19.

35 Hughes Comments at 3.

36 MTN Comments at 16-17 (citing *FWCC Request for Declaratory Ruling on Partial-Band Licensing of Earth Stations in the Fixed-Satellite Service That Share Terrestrial Spectrum*, First Report and Order, 16 FCC Rcd 11511 (2001)).

37 Intelsat Comments at 2-3.

MTN agrees that the best way to regulate ESVs is to provide, within the relevant sections of Part 25, for specific definitions of the application, specific frequency bands that may be used, performance requirements, and coordination guidelines for ESVs in-motion near shore or while stationary at a pre-determined point.

In its comments, Inmarsat urges the Commission to designate ESVs as a primary user within the current FSS allocation because "it is very difficult to broadly deploy a service that is permitted to operate only on a secondary, non-interference basis, and with which no primary user has any obligation to coordinate."[38] Inmarsat's recommendation in this regard supports the regulatory objectives of the "dockside out" or VSAT licensing models. Like those models, the designation of ESVs as a co-primary application within the FSS would protect FS operators from potential ESV interference, while also conclusively establishing the regulatory stability needed to provide essential ESV-based services.

MTN observes that all commenters who weighed in on the issue of "receive only" ESV operations oppose that proposal as completely inadequate for the intended application of ESVs. SIA correctly states that "many of the beneficial uses of satellite telecommunications onboard vessels arise from the ability of vessels to transmit all forms of information to, as well as receive information from, the shore."[39] Intelsat concurs, noting that "[b]y removing the return channel, the ESV would be severely limited in the types of service that could be provided," such as trunking telephony and multimedia and video conferencing, which require high data rates in both directions.[40] Given the lack of support or possible justification for "receive only" ESV

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38 Inmarsat Comments at 5.

39 SIA Comments at 3 (noting that adopting rules or policies to prevent interference to terrestrial stations also negates the need to limit ESVs to "receive only" operations).

40 Intelsat Comments at 4.

operations, the Commission should decline to impose such restrictive licensing, which, as MTN indicated in its comments, would quickly put MTN and its competitors out of business.[41]

IV. There Is No Basis Whatsoever For The Onerous Licensing Restrictions Urged By FWCC, Which, If Implemented, Would Eviscerate ESV-based Services.

In contrast to all other commenters in this proceeding, which collectively favor a licensing regime that harmonizes co-frequency ESV and FS operations, FWCC urges the Commission either to bar certain ESV operations outright or to impose "rigorous" licensing restrictions that would, in effect, render ESVs useless.[42] The inflexible regulatory approach taken by FWCC clearly puts it out of step with the more evenhanded and rational approach exhibited by the other commenters, which fairly seek to accommodate ESVs while taking into account the potential for interference to the FS.

Significantly, FWCC's licensing restrictions have no technical justification, given the lack of credible evidence of ESV interference. Thus, its comments are properly seen *not* as an attempt to protect the genuine interests of the FS (which experience shows are already protected), but rather as an effort to forestall the future licensing and operations of ESVs. In order to serve the legitimate needs of all parties affected by ESV licensing, MTN urges the Commission to reject the decidedly obstructionist licensing restrictions advanced by FWCC.

A. ESVs Are Neither A Credible Threat To FS Operations Nor A Potential Source of Interference That Is "Almost Impossible" To Identify.

FWCC first recommends that the Commission prohibit ESVs from operating while "in motion" in the C-band at locations close to the U.S. coastline, on the theory that moving vessels make tracking down and confirming the source of interference "almost impossible."[43] MTN objects in the strongest possible terms to the faulty pair of premises underlying this

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41 MTN Comments at 20.

42 FWCC Comments at 2.

43 *Id.* at 2-3.

recommendation – namely, that ESVs present a genuine risk to terrestrial FS operations, and that prior coordination of a non-fixed station is necessarily more difficult to achieve than prior coordination of a fixed station. Neither premise is supported by the facts.

1. There have been no substantiated claims of ESV interference, and FWCC's belated attempt to generate a record in support of such a claim is calculated to influence the NOI rather than document a real ESV interference problem.

As MTN and others have explained in their comments, ESVs do not represent a credible interference threat to terrestrial FS stations.[44] Indeed, all allegations of such interference reported to date have been thoroughly investigated and, with the exception of one anomalous incident that occurred outside of the United States,[45] found not to have been caused by ESVs. The impressive record of ESV/FS co-existence in this country indicates the success of the many measures that MTN and others have devised and employed to keep the potential for interference to the FS unrealized.

Any objective observer must conclude that the two speculative "possible incidents" of interference raised by FWCC in its comments utterly fail to support its call for the onerous regulation of ESVs. FWCC first resurrects its prior complaint alleging interference from cruise ships in Alaska's inland passage near Juneau[46] – an incident that MTN has previously demonstrated could not have been caused by cruise ships using its ESV system.[47] MTN

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44 *See, e.g.*, MTN Comments at 7-8; MCS Comments at 3.

45 The incident occurred in the Outer Hebrides, Scotland, and involved the United Kingdom and Norwegian administrations. As MTN explained in its comments, the interference was caused by the highly improbable confluence of equipment malfunction, failure to follow basic operating procedures on the ship, and a lack of intervention by the controlling teleport. Had simple rules of operation been followed, the incident would have been avoided. MTN Comments at 8.

46 FWCC Comments at 4.

47 *See* Letter from Eliot J. Greenwald, Counsel for MTN, to Mitchell Lazarus, Counsel for FWCC (dated August 8, 2001) (including an analysis of the alleged interference by the Pinnacle Telecom Group, which concluded that "a simple analysis of the limited information available demonstrates that MTN's operations were not the source of the problems experienced [in Alaska]").

conclusively made this showing notwithstanding the complaint's conspicuous lack of detail regarding the claimed interference. Given the lack of substance to FWCC's complaint, the Commission should promptly dismiss the Alaska allegation as lacking in merit.

FWCC then raises, for the first time and without evidence, allegations of interference experienced last year by a Verizon Wireless link in the Newport News vicinity, which it speculates was caused by an unnamed but "nearby vessel equipped with an ESV station."[48] In a belated attempt to support this claim by developing a record that clearly does not exist, FWCC very recently contacted MTN by letter (a copy of which is included as an attachment to these reply comments) requesting information regarding MTN's operations in and around Newport News at the times of the alleged interference.[49] MTN questions both the timing of this request and the authority of FWCC to make it. Were the Newport News matter a genuine cause of concern, the alleged incidents certainly would have been brought to MTN's attention sooner than *nine months* after the fact. Also, were the Newport News matter legitimate, the affected licensee, Verizon Wireless, would have been expected to investigate the alleged incidents itself, rather than an umbrella organization with no apparent authorization to act on behalf of the licensee. At the very least, FWCC's request for information should have predated, not postdated, its now admittedly unsubstantiated allegations. MTN cannot help but conclude (as should the Commission) that the Newport News allegations and FWCC's related request for information are collectively nothing more than a calculated attempt to influence the NOI by casting ESVs in a false light.

For that very reason, MTN feels no obligation to respond to FWCC's request for information. Nevertheless, it voluntarily states for the record that no MTN-serviced vessel was

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[48] FWCC Comments at n.5.

[49] *See* Letter from Mitchell Lazarus, Counsel for FWCC, to Raul Rodriguez, Counsel for MTN (dated June 3, 2002). The letter was received by MTN after the comment-filing deadline in this proceeding and just one week prior to the reply comment deadline.

within 100 kilometers of Newport News at any point when Verizon Wireless allegedly experienced interference, and thus could not have been the cause of the claimed interference. In addition, MTN understands that the Newport News matter has likewise been investigated by the U.S. Navy and determined not to be the result of its ESV operations either.[50] Thus, the Newport News allegations, like the Alaska allegation before it, cannot possibly serve as credible evidence of ESV interference into co-channel FS operations.[51] Indeed, if these allegations, as dubious as they are, form the full extent of "interference" resulting from ESV operation over the past decade, terrestrial FS stations must, by any measure, be deemed to be adequately protected.

2. The mobile nature of ESVs do not complicate interference detection and avoidance.

Even if ESV operations did run the risk of actually, rather than theoretically, interfering with FS stations, such operations would not pose the threat that FWCC fears. That is because the "mobile" nature of ESV-equipped vessels has little or no bearing on the ability to identify and shut down the source of interference, as MTN's existing network ably demonstrates. Although ESV-equipped vessels comprising the MTN network sail to ports of call around the world, MTN still is able to monitor the location of each ESV in its network at all times, and to maintain the ability to terminate quickly any interfering station. Moreover, the MTN network features a single point of contact for all ESV operations. Thus, in the unlikely event of interference, resolution of the incident would simply require the usual interaction between frequency

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[50] MTN believes that the U.S. Navy has investigated the Newport News allegation thoroughly using the records of frequencies assigned through the frequency coordination process that it uses in connection with U.S. seaports. MTN has considerable experience working with the Navy in support of its ESV operations, and is aware that the Navy employs a very similar method to the one used by MTN for analyzing the potential for interference, which involves submitting requests for frequency through the National Telecommunications and Information Administration to the Interdepartmental Radio Advisory Committee. Thus, MTN is certain that the Navy has accurate and complete records of the frequencies used and of the movement of ships in the Newport News area.

[51] The dearth of examples of ESV interference is not the result of any lack of effort on the part of the fixed wireless community to identify such examples. For instance, the United Telecom Council has placed an FWCC-produced questionnaire on its website that specifically requests its membership to document problems experienced in coordinating with satellite earth stations, including earth stations operating in the C-band. *See* http://www.utc.org/?v2_group=0&p=1144 (visited June 5, 2002).

coordinators representing the ESV and FS systems, or having the frequency coordinator representing the FS system contact MTN directly.

FWCC's concern regarding the mobility of ESVs also ignores the ease by which interference from other mobile sources, such as airborne radar, is recognized by FS stations. These stations readily identify such an interfering source based upon its pattern of interference, which indicates, among other properties, the transmit frequency of the interfering carrier and the speed of passage of the mobile source. Significantly, potential interference from ESVs would be even easier to identify than interference from other mobile sources, because of the relatively slow rate of passage of ships and the fact that most cruise line vessels repeat their itineraries consistently over an entire season.

B. ESVs Need Not, And Must Not, Be Authorized On A Special Temporary, Developmental Or Experimental Basis Only.

As to those ESV operations that it would allow, FWCC asserts that Commission authorization of such operations must be on a special temporary, developmental, or experimental basis only, so long as ESVs continue a "non-conforming use" under the ITU and FCC tables of allocations.[52] On its face, FWCC's position reveals a misunderstanding of the scope of the instant proceeding. In the NOI, the Commission specifically asks whether "the time is ripe" for developing rules for licensing ESVs.[53] Were the licensing of ESVs foreclosed in the manner suggested by FWCC, the Commission would not have raised the possibility of licensing in the NOI. In any event, and as discussed above, growth of the ESV industry would benefit from a more stable regulatory regime than is possible through STAs, developmental authorizations, or experimental licensing.

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52 FWCC Comments at 5.

53 NOI at ¶ 14.

C. ESV-Based Services Should Not Be Pigeonholed As "Mobile" Or "Temporary Fixed."

FWCC next maintains that ESV stations are inherently mobile and therefore do not conform to the definition of earth stations intended to operate within FSS networks.[54] Furthermore, it supports an earlier International Bureau determination that dockside operations are properly regulated as "temporary-fixed" services.[55] The Commission need not classify ESV-based services in so narrow a manner.

Semantics notwithstanding, ESVs should not be relegated to the MSS bands simply on the pretext that ships at sea are "mobile." As MTN and others (including Inmarsat) have explained, the MSS bands are incapable of supporting ESV operations, in large part due to their inadequate bandwidth.[56] In addition, experience over the past ten years conclusively shows that ESVs are fully capable of complying with the operational requirements of the FSS – both to prevent interference to other FSS networks and to other co-primary users of the shared bands, such as the FS.

It is noteworthy that since the 1997 World Radiocommunication Conference ("WRC-97"), the U.S. has consistently supported ESV operations in the FSS frequencies. Prior to WRC-97, the U.S. considered the possibility of operating ESVs within the mobile maritime satellite service ("MMSS"). Several administrations at WRC-97, however, argued that adding an MMSS (or MSS) allocation to C-band would have the undesirable effect of requiring existing space stations operation in that band to re-coordinate for the new allocation. These administrations also believed that an MMSS allocation at C-band would have resulted in the launching of new space stations in an increasingly crowded band. For these and other reasons, WRC-97 adopted a

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54 FWCC Comments at 7.

55 *Id.* at 8.

56 *See* Section II.B. *supra*.

future agenda item "to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service networks in the bands 3 700 – 4 200 MHz and 5 925 – 6 425 MHz, including their coordination with other services allocated in these bands."[57]

The U.S. submitted a proposal to WRC-2000 that asked for a footnote to be added to the Table of Allocations in the Radio Regulations permitting the specific use of ESVs within C-band FSS networks.[58] In addition, the preliminary proposal that the U.S. has adopted for agenda item 1.26 for WRC-03 expands the frequency bands to include ESV operations in the Ku-band within FSS networks as a complement to C-band operations.[59] As part of the proposed changes to the Radio Regulations to satisfy agenda item 1.26, the U.S. WRC-03 Advisory Committee working group concerned with this agenda item has recently adopted a definition of ESV for Article 1, which specifies that ESVs will operate within FSS networks.[60]

The notion that dockside ESV operations are best classified as a "temporary-fixed" service, like the classification of ESVs as "mobile," is too rigid, and will belie the true nature of such operations if, for example, the "dockside out" or a comparable licensing model is adopted. As MTN explained in its comments, licenses covering a particular dock area are more accurately deemed permanent (rather than temporary fixed) because operations at a particular seaport are, in effect, "fixed" to particular locations at that port.[61] Significantly, terrestrial FS would be protected under such a licensing approach because the frequencies encompassed by a license

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57 WRC-2000 agenda item 1.8.

58 WRC-2000, Document 12-E, at 21.

59 WRC-03 Advisory Committee, Document IWG-4/17.

60 WRC-03 Advisory Committee, Document IWG-4/30.

61 MTN Comments at 14-15.

would be fully coordinated with the FS under the composite coordination area recommendations of Working Party 4-9S.[62]

V. The Commission Should Reject The Gratuitous Licensing Conditions Recommended By FWCC, Which Are Prompted By An Exaggerated Concern Regarding ESV Interference.

In its comments, FWCC recommends that certain C-band licensing conditions be imposed in order to achieve the level of FS protection that FWCC alone among the commenters feels is necessary. As with its recommended licensing restrictions, the FWCC's licensing conditions cannot be justified on technical grounds, and thus serve only to obstruct the worthwhile effort to license ESVs.

FWCC first urges the Commission to prohibit C-band ESV stations installed on foreign-flagged vessels from transmitting within "interference range" of the U.S. coastline unless the nation of registry has first entered into a bilateral agreement with the United States.[63] MTN believes that bilateral agreements are an unwieldy "solution" that needlessly burden both ESV operators and administrations. Other more efficient ways to achieve the same interference-avoidance objectives undoubtedly exist, including under the "dockside out" and VSAT licensing models identified by MTN. The VSAT model, in particular, would minimize administrative burdens by allowing for the authorization of multiple technically equivalent earth stations under one license.

FWCC next offers a list of conditions that it recommends be applied to all ESV authorizations, gateway earth station licenses for ESV networks, and bilateral agreements. The majority of these conditions should be rejected as simply unworkable. First, FWCC recommends a minimum antenna elevation angle coordinated to a specific satellite.[64] The

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62 *Id.* at 24-25.

63 FWCC Comments at 9.

64 FWCC Comments at 10.

Commission should reject this approach because, as MTN explained in its comments, ESVs need the flexibility to access any satellite available to them.[65] Rather than limit access to specific satellites, the arc available at a particular seaport could be limited or a range of satellites for use in a port could be identified.[66]

FWCC next recommends the installation of an automatic shut-off mechanism for terminating transmissions whenever the ESV-equipped vessel travels outside predetermined operating areas or in the event the station operates at variance from required technical parameters.[67] This licensing condition is patently redundant. As MTN and others have explained, gateway operators already are able to monitor, control and remotely terminate transmissions from any ESV in their networks.[68]

FWCC also believes that the Commission should require each ESV gateway operator to maintain an Internet-accessible list of ESV stations connected to its network, including a list of all frequencies cleared for use by each ESV station, and the name and country of registry of each ESV vessel.[69] MTN opposes this recommendation on two grounds. First, like the other licensing conditions FWCC favors, the Internet maintenance requirement would impose an unnecessary burden on ESV gateway operators, given the *de minimis* risk of interference to FS stations from ESVs and the proven methods of terminating offending transmissions that may result. Second, and more importantly, to the extent that FWCC's recommendation involves

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65 MTN Comments at 22.

66 On the other hand, MTN can support the remaining FWCC-recommended antenna conditions (i.e., minimum antenna diameter, maximum half-power antenna beamwidth, and antenna tracking accuracy) if such conditions are reasonable. To this end, MTN reiterates its support for the technical guidelines to Annex 2 to Resolution 82. *See* MTN Comments at 21.

67 FWCC Comments at 10.

68 *See, e.g.*, Intelsat Comments at 3 (noting that "gateway earth station operators can inhibit ESV transmissions or control their access to the network").

69 FWCC Comments at 10.

posting vessel-tracking information on the Internet, that recommendation would pose a significant security risk. Information pertaining to the location of ships, particularly cruise ships, presents too great a threat to public safety in the post-September 11 environment. In lieu of Internet posting, the Commission should adopt the more sensible approach favored by MTN in its comments, which would make ESV information available only to responsible public safety authorities, the Commission, and authorized representatives of the licensees in shared bands upon request.[70]

FWCC's exaggerated concern regarding the likelihood of ESV interference prompts its support for the establishment of an overly protective distance from shore – i.e., 300 kilometers – beyond which unacceptable interference from ESVs to terrestrial FS stations should not be possible.[71] Other commenters recommend a more reasonable distance from shore standard. Intelsat, for example, proposes 100 kilometers as the coordination distance, which is consistent with the distance stipulated by the Commission in a waiver granted to MTN in 1996,[72] while Inmarsat states that reducing C-band distances to 200 kilometers may be appropriate for operations in the U.S.[73] Based on its more than ten years of operational experience, MTN believes that the potential for ESVs to cause harmful interference would be negligible beyond the "Minimum Distance" currently being developed in the ITU for both the C- and Ku-bands.[74]

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70 MTN Comments at 23.

71 FWCC Comments at 11-12 (citing the superior radio propagation characteristics over oceans and the cumulative effect that interference from multiple ESV vessels could have on coastal FS stations).

72 *See* MTN Comments at 23 (citing *Mobile Satellite-Based Communications Services by Crescomm Transmission Services, Inc. and Qualcomm Incorporated,* Order, 11 FCC Rcd 10944 (Int'l Bureau and OET, 1996).

73 Intelsat Comments at 4; Inmarsat Comments at 6.

74 *See* MTN Comments at 23. Indeed, as noted, MTN coordinated ESV operations using even shorter distances than those being developed in the ITU, as stipulated in the Commission's 1996 waiver granted to MTN. *See id.*

Finally, FWCC recommends "relatively short" license terms for ESVs for two dubious reasons: first, to provide an incentive for ESV operators to cooperate in the resolution and prevention of interference; and second, to prevent ESV operators from "tying up" the band for long periods of time.[75] In contrast, MTN and others maintain that license terms of less than the full 15 years accorded to other earth station licensees cannot be justified.[76] These full-term advocates correctly believe that shorter terms (e.g., the one to three years proposed in the NOI) would severely undermine the stable regulatory regime that ESVs require, and would also stifle investment in the ESV industry.[77] In addition, the ostensible benefits to shorter terms cited by FWCC provide no added value because of the measures already in place to monitor and, if necessary, terminate ESV operations. In light of these facts, MTN urges the Commission to consider only full 15-year terms when licensing ESVs.

VI. Conclusion

With one exception, the comments filed in response to the NOI favor the adoption of a regulatory regime that fairly promotes a stable environment for ESV-based services while protecting the legitimate interests of terrestrial FS stations. The lone dissenting voice belongs to FWCC, which supports its call for the overly burdensome regulation of ESVs on the theoretical (rather than actual) threat of ESV interference to terrestrial FS stations. Given the absence of any real threat of interference, FWCC's position has no technical basis, and its comments are revealed to be nothing more than an attempt to impede the advancement of ESV authorization.

Rather than adopt the obstructionist regulatory approach of FWCC, MTN urges the Commission to heed the consensus views expressed by the other more accommodating parties to this proceeding. Most critically, the Commission should recognize the essential nature of ESV-

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75 FWCC Comments at 12-13.

76 *See, e.g.*, MTN Comments at 21; Hughes Comments at 3.

77 *See, e.g.*, SIA Comments at 2.

based services, and allow these vital services to continue in the FSS C- and Ku-bands, while also providing for the continued protection of terrestrial FS operations. Finally, given the critical importance of ESV operations, MTN urges the Commission to commence immediately a rule making proceeding leading to the fair and reasonable authorization of ESVs.

Respectfully submitted,

MARITIME TELECOMMUNICATIONS NETWORK, INC.

By: _____

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Re: Maritime Telecommunications Network, Inc. ("MTN")

Dear Raul:

The Fixed Wireless Communications Coalition ("FWCC") is attempting to trace the source of interference experienced by a fixed microwave link operating in the 6 GHz band in the vicinity of Newport News, VA. The interference episode was described at page 4, footnote 5, of FWCC's Comments filed with the Federal Communications Commission on May 10, 2002, in IB Docket No. 02-10.

Some of the time periods during which interference occurred are as follows: August 27, 2001, from 1:41 a.m. until 1:44 a.m.; September 22, 2001, from 8:50 a.m. until 9:53 a.m.; September 23, 2001 from 6:48 a.m. until 8:47 a.m.; and September 27, 2001, from 4:21 a.m. until 4:44 a.m.

In order to facilitate this investigation, the FWCC asks MTN to provide the following information:

The name of any ship equipped with an earth station on board vessel ("ESV") within 100 km of the ports of Newport News or Norfolk, VA, during the time periods indicated above;

For each such vessel located at a fixed location (such as a pier or dock), the latitude and longitude of the fixed location;

For each such vessel operating while underway, the time periods and corresponding locations of the vessel, preferably indicated by map showing the vessel's route;

For all such ESVs (whether at dockside or underway) (1) the date of the frequency coordination and the name of the frequency coordinator that performed it; (2) a copy of all operating logs or other records indicating the time of transmissions from the ESV on the dates indicated above; (3) the ESV's operating frequency and bandwidth; (4) the name and orbital location of the satellite with which the ESV was communicating; and (5) a listing of any technical or operational parameters that were at variance with the parameters used in the frequency coordination.

If you have any questions about this request, please do not hesitate to contact me directly.

Sincerely,

Mitchell Lazarus
Counsel for the Fixed Wireless Communications Coalition

ML:deb

CERTIFICATE OF SERVICE

I, Rebecca J. Cole, do hereby certify that on this 10th day of June, 2002, I sent by U.S. first-class, postage prepaid mail, a copy of the foregoing Reply Comments of Maritime Telecommunications Network, Inc. to the following:

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