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	)	IB Docket No. 02-10
In the 5925-6425 MHz/3700-4200 MHz	)	
Band and 14.0-14.5 GHz/11.7-12.2 GHz	)	
Bands	)	

REPLY COMMENTS OF TELENOR SATELLITE SERVICES, INC.

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Date: March 24, 2004

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Telenor Satellite Services, Inc., on behalf of itself and its affiliate Telenor Satellite Services AS (together, "Telenor") hereby files its reply comments in response to the Notice of Proposed Rulemaking in the above-referenced proceeding.[1]

Telenor is generally encouraged by the comments filed in this proceeding, most of which echo Telenor's belief that this proceeding is a positive development for the ESV industry in that the adoption of rules governing the provision of ESV services will give the industry the regulatory certainty that it has long needed in order to flourish.

A number of commenting parties, however, continue their campaign to frighten the Commission into adopting unnecessarily restrictive rules by raising the specter of interference issues that have no basis whatsoever in fact. Telenor submits these reply comments for the purpose of emphasizing the point made by itself and many other parties in this proceeding: that extensive experience providing C-band ESV service has shown

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[1] *In the Matter of 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 Rulemaking, IB Docket No. 02-10, FCC 03-286 (released Nov. 24, 2003) ("Notice").

no problems with interference to land-based FS systems. In fact, the comments of the Fixed Wireless Communications Coalition and its supporters demonstrate this point ably: despite being specifically invited by the Commission in the NPRM to provide examples of interference, not one commenting party has been able to do so.[2] Their silence speaks volumes.

Discussion

There Is No Evidence of Interference From ESV Operations in the C-band

As Telenor, Maritime Telecommunications Network, Inc., and other commenters discussed, the ESV industry has extensive experience throughout the world dealing with spectrum use issues, and interference from ESVs to FS operations on shore simply has never proven to be a problem.[3] As MTN states, "in more than twelve years of ESV operations in C-band, *there have been no substantial instances of interference from ESVs to FS stations under normal operating conditions*."[4] Telenor's own experience is identical.[5] FWCC, on the other hand, claims that interference might occur in theory, but it is utterly unable to provide an example of even one instance of interference to an FS operation from an ESV. This is significant, as the Commission specifically requested

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[2] *See generally,* Comments of The Fixed Wireless Communications Coalition, IB Docket No. 02-10, filed Feb. 23, 2004 ("FWCC").

[3] *See generally,* Comments of Maritime Telecommunication Networks, Inc., IB Docket No. 02-10, filed Feb. 23, 2004 ("MTN").

[4] MTN at 9-10 (emphasis in original). *See also* Comments By Pinnacle Telecom Group, IB Docket No. 02-10, filed Feb. 23, 2004, at 11 ("Pinnacle").

[5] As Telenor stated in its comments, in its thirteen years providing ESV services throughout the world, there has only been one example of interference to an FS operator, which was caused not by ordinary ESV operation but by an anomalous hardware failure that was quickly rectified. Telenor at 5.

that parties address interference issues in their comments. If the FWCC and others, in the face of this invitation and after participating in ESV-related Commission proceedings for over a decade, have not been able to produce one verifiable incident of interference, the only conclusion that the Commission can draw is that such claims of interference are mere fantasy. The total lack of any evidence of interference means that the record in this proceeding simply does not support adoption by the Commission of rules that are punitive to C-band operators simply because FWCC and others assert the theoretical possibility of problems.

FWCC asserts that the lack of verifiable evidence of interference can be ascribed to the transient nature of ESVs.[6] Again, this theory is belied by real-world evidence; in fact, the nature of ESVs, which are often used on cruise ships with regular routes and schedules, makes it extremely *likely* that examples of interference would be easily identifiable. As Pinnacle states (with respect to coordination work it performed with MTN), "[a]s much of MTN's operations involve large cruise ships operating on regular schedules into and out of ports they serve, if interference to microwave stations were indeed a problem, we find it hard to believe that no one has ever correlated any instances of harmful interference with the published cruise ship schedules."[7] If no examples of harmful interference can be provided by FWCC, the only plausible explanation can be that harmful interference caused by ESVs simply does not occur in the real world.

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[6] FWCC at 5-6.

[7] Pinnacle at 3.

Most Commenters Support ESV Operations In Both the C-band and the Ku-band.

All of the ESV operators filing comments in this proceeding -- the entities with the most direct experience in these matters -- support the position stated by Telenor that ESV operations in the C-band are crucial and that the Commission should not adopt rules that would discourage use of these frequencies.[8] All of these operators understand that, while the use of Ku-band for ESV services can certainly complement the use of C-band, the Ku-band simply has too many deficiencies both in terms of coverage and capabilities for it to be relied upon for many ESV operations.

As MTN has noted, for example, there is insufficient Ku-band capacity available, Ku-band has limited geographical coverage, with virtually no coverage of ocean regions, and Ku-band operations are susceptible to interference from precipitation.[9] C-band, on the other hand, offers excellent reliability, wide geographical coverage, and plentiful transponder capacity.[10] The benefits of C-band use described in the comments , combined with the absence of real-world interference concerns to FS operators discussed above, creates a record in this proceeding that simply does not support the adoption of a policy favoring the use of Ku-band over C-band.

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[8] *See* Comments of Inmarsat Ventures Ltd, IB Docket No. 02-10, filed Feb. 23, 2004, at 18 ("Inmarsat"); Comments of Broadband Maritime, Inc., IB Docket No. 02-10, filed Feb. 23, 2004, at 2 ("Broadband"); Comments of SES Americom, Inc., IB Docket No. 02-10, Feb. 23, 2004, at 2-3 ("SES Americom"); Comments of Intelsat Global Service Corp., IB Docket No. 02-10, filed Feb. 23, 2004, at 5 ("Intelsat"); MTN at 7-9.

[9] MTN at 7-8.

[10] Id. at 8.

Statements of FWCC Regarding Use of the C-band Are Misleading and Incorrect

In addition to its claims of interference, FWCC in its comments makes a number of assertions that are misleading and, in many cases, incorrect. Because FWCC is unable to present solid evidence to support its interference claims, it has chosen to resort to using hyperbole and emotional statements to help press its case. Telenor believes that it is important for the Commission to base its decisions in this proceeding on fact, and it should not allow itself to be swayed by attractive arguments that have no basis in reality.

First, FWCC writes that the C-band "is congested and getting worse . . . ," a decidedly misleading statement.[11] While the C-band is used heavily, the whole point of this proceeding is to permit use of the available spectrum as efficiently as possible, including spectrum in the maritime environment otherwise lying fallow. Even on and immediately adjacent to land, however, there is no evidence that any ESV operator has had difficulty in coordinating sufficient C-band spectrum, even in busy ports such as Fort Lauderdale and Miami. If the C-band truly is "congested and getting worse," ESV commenters would have complained of an inability to coordinate their harbor operations, but none has. In contrast, MTN states that it engaged in frequency coordination of 17 U.S. ports every six months for three years and that during this time, "ample frequencies were cleared for ESV operations. . . ."[12]

Second, FWCC uses the specter of interference to "public safety" communications to frighten the Commission. Beside the fact that no interference to any such communications has ever been shown to have occurred, this argument should not in

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[11] FWCC at 2.

[12] MTN at 18.

itself sway the Commission. While public safety communications certainly are important, as noted by MTN, the C-band is a commercial band and *not* a public safety band.[13] The Commission is not permitted to engage in the exercise of ranking uses within the C-band based on their perceived worth or importance. This is particularly true in light of the vital homeland security applications for which ESV services are utilized, as noted by many of the commenters in this proceeding. Such uses are also of great importance, of course, but no party can (or should) determine which application should be accorded a higher priority, and the Commission cannot reasonably be expected to base its decisions in this proceeding on the relative worth of applications to which the particular technologies are put. As MTN states, FWCC's arguments, while tempting, are of no legal significance to the Commission.[14]

Third, FWCC badly mischaracterizes the relative costs and benefits of ESV services. FWCC repeatedly states that the costs of complying with the onerous burdens that it proposes to place on ESV operators should simply be borne by the ESV operators, who, according to FWCC, are the "sole economic beneficiaries of their own operations" who "can reasonably be asked to bear the financial costs of protecting the FS."[15] This sentiment ignores completely the very substantial benefits to the public interest in encouraging the development of ESV services. As MTN discussed in its comments, for example, this type of sentiment ignores two important and oft-stated policy goals of the Commission: market-driven deployment of broadband technologies and efficient

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[13] Id. at 4.

[14] Id. at 4.

[15] FWCC at 3.

spectrum usage.[16] In addition, ESV services bring economic and other benefits to all parties involved; ESV applications include oil and gas exploration, homeland security, shipping logistics, passenger and crew communications, and so on. Each of these applications is crucial to the parties utilizing them. Therefore, burdening ESV operations to the point where provision of service becomes infeasible would have a ripple effect through the economy, affecting all parties involved. The costs in fact are far higher than those casually dismissed by FWCC.

FWCC further belittles the substantial investments made by ESV operators, singling out MTN in particular. FWCC states that MTN was operating at its own risk when it invested in it ESV infrastructure and that this cannot be a factor in the Commission's decision whether to grant permanent authority.[17] However, MTN's $25 million in capital investments is a drop in the sea. There are numerous other ESV operators who have invested substantial amounts of money in ESV and hub hardware. Scores of customers -- including oil and gas companies, fishing fleets, cruise ship lines, shipping lines, and the U.S. government -- as well as numerous manufacturers have invested tens of millions of dollars in equipment and labor developing and implementing wideband mobile technologies using C-band. FWCC's simplistic view that placing severe restrictions on C-band operations will affect only a handful of companies who can simply absorb higher costs badly mischaracterizes the significant effect that the Commission's proposed C-band restrictions would have on a wide variety of entities throughout the economy.

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[16] MTN at 3.

[17] FWCC at 10, n.23.

Telenor Supports Both a Coordination and a Non-Coordination Approach

After reviewing all of the comments filed, Telenor believes that the Commission should adopt both a coordination and non-coordination approach with respect to C-band licensing, as both proposals have merits with respect to different types of ESV operations. The Commission's coordination approach is valuable for those instances where ships pay regular calls to specific ports. However, Telenor must agree with MTN that the coordination approach only works if ESV operators are permitted to operate on a co-primary basis with other licensees. As MTN notes, ESV operators have little incentive to undergo the time and expense of coordinating with FS and other operators if at the end of the day they are required to operate on a non-interference basis anyway.[18] The whole process of spectrum usage coordination is based on the premise of evaluating and resolving interference potential with existing users *prior* to being issued a license. Once this process is complete and it is shown that sharing of the band can be successfully accomplished, there is no sound rationale for treating the ESV operators as second-class citizens.

Telenor also supports the availability of a non-coordination approach. A large number of ESV customers spend most of their time at sea and put into port only on rare occasions. Coordinating spectrum in a way that will accommodate such customers would prove to be exceedingly difficult if not impossible. However, a mechanism does still need to be in place that would permit ships to operate in U.S. waters without prior

[18] MTN at 14-15.

coordination, and the non-coordination approach proposed by the Commission appears to be a workable solution.[19]

The Commission Should Not Limit ESV Frequencies in the C-band

Telenor joins with other commenters in the proceeding to urge the Commission not to impose restrictions on the C-band frequencies in which ESV services may operate.[20] Such a proposal is not realistic given the manner in which ESV services operate. Many if not most ESV customers change operational areas frequently and therefore switch satellites. As ESVs move on to new satellites, different ESVs come into the area and use the "old" frequencies. ESVs, therefore, almost never "occupy" the same set of frequencies for a very long period. The smaller the amount of available spectrum, the more difficult it will become for ESV operators to secure adequate satellite capacity.[21] In addition, as MTN notes, every location and port has different characteristics affecting ESV transmissions, so limiting spectrum access generically makes little sense. In addition, limiting an ESV operator's access to spectrum would actually make it *more* difficult to avoid interference, as such limits would put artificial constraints on the ESV operator's operational flexibility.[22]

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[19] As Telenor discussed in its comments, the Commission's proposed 300 kilometer limit for unlicensed C-band operation is vastly over-protective of FS operations. Telenor supports the proposal made by MTN and others to adopt a 100 kilometer limit, which is still a conservative distance but one that is more commercially reasonable. *See also*, Intelsat at 4.

[20] *See, e.g.*, Comments of Stratos Offshore Services Co., IB Docket No. 02-10, filed Feb. 23, 2004, at 13 ("Stratos"); Inmarsat at 19-20; MTN at 16.

[21] *See* Inmarsat at 20.

[22] Telenor continues to believe that the best way to give ESV operators sufficient flexibility to mean operational requirements while avoiding the potential for interference

Telenor Strongly Opposes Any Automatic Shutdown Mechanism Requirements

Telenor joins a number of other commenters in strongly opposing any requirement by the Commission that ESV operators implement an automatic shutdown mechanism.[23] An automatic shutdown system would cause myriad problems for ESV customers, most of whom rely very heavily on these systems for vital operational communications. No reasonable customer would trust a system that had the potential to be cut off without warning, and an automatic shutdown mechanism would add a considerable layer of complexity to an already complicated system, leading to inevitable -- and unacceptable -- outages. And such a mechanism is not needed; as both MTN and Inmarsat note, ESV transmissions can be readily shut down at the hub site, and ships can also be directed by the hub site to change course or position to avoid interference if a warning is given.

The Commission Should Ensure That the Outcome of This Proceeding Is Consistent With the Conclusions of the WRC-03 and Other Forums

Telenor is concerned that, in a number of key areas, the Commission's proposals diverge from the carefully-established conclusions arrived at during WRC-03, conclusions that were in several cases driven by the United States. Telenor believes that it is essential that, wherever possible, the Commission's new rules not be in conflict with these conclusions, nor with the new radio regulations established by the International Telecommunication Union and the work currently being done at CEPT. Because of the

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is to adopt a blanket licensing regime under which the operator's ESV hub is licensed to operate with terminals aboard U.S.- and non-U.S. flagged vessels. The Commission should base this blanket licensing scheme on the current rules governing VSAT hub licensing.

[23] See MTN at 21-22; Inmarsat at 15-16.

international nature of ESV service -- virtually all large ships serving the United States are foreign-flagged, and ships routinely travel from country to country -- it is imperative that the Commission arrive at a set of rules that are common with rules established elsewhere. Telenor agrees with Inmarsat that this is an ideal time, as rules are being implemented around the world, for the Commission to develop bilateral or multilateral agreements that would allow U.S. ships to operate in foreign waters and foreign-flagged vessels to operate in U.S. waters under a common set of operational and technical conditions.[24]

Conclusion

As Telenor discussed in its initial comments, we urge the Commission to adopt sensible rules that will encourage the growth of ESV service without imposing unduly burdensome requirements that have never shown to be needed. The Commission should not be swayed by unfounded arguments put forward by FWCC and others that, while attractive on their face, simply have no basis in fact.

Respectfully submitted,

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March 24, 2004

[24] Inmarsat at 26.