

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Spectrum Policy Task Force Seeks Public Comment on Issues Related to Commission's Spectrum Policies)	ET Docket No. 02-135
)	

REPLY COMMENTS OF INMARSAT VENTURES PLC

Inmarsat Ventures plc (“Inmarsat”) hereby submits these Reply Comments to the Comments of Mobile Satellite Ventures Subsidiary LLC (“MSV”) on the Public Notice of the Spectrum Policy Task Force.¹ Inmarsat is filing these Reply Comments to correct certain incorrect claims made by MSV and to emphasize that terrestrial use of L-band MSS spectrum would come at the expense of existing MSS service.

The focus of MSV’s comments is its pending proposal to deploy a so-called ancillary terrestrial component (“ATC”) to MSV’s currently operating Mobile Satellite Service (“MSS”) system, which operates in parts of the L-band – MSS spectrum between 1525-1559 MHz and 1626.5-1660.5 MHz.² Contrary to MSV’s assertions, ATC

¹ See Comments of Mobile Satellite Ventures Subsidiary LLC, ET Docket No. 02-135 (filed July 8, 2002) (“MSV Comments”).

² The Commission is examining the use of ATC in certain spectrum bands, including the L-band, in a separate proceeding, in which Inmarsat has filed extensive comments and technical papers. See *In the Matter of Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band, Notice of Proposed Rule Making*, IB Docket No. 01-185 and ET Docket No. 95-18 (rel. August 17, 2001) (the “ATC NPRM” or, as a proceeding, the “ATC Proceeding”).

deployment in the L-band would come at a very high cost: (i) it would consume far more spectrum than MSV's MSS system needs to operate alone, (ii) it would generate harmful interference into Inmarsat's MSS system, and (iii) it would violate the ITU's Table of Frequency Allocations as well as an international coordination agreement entered into by the United States. The Commission has repeatedly recognized that there is a shortage of L-band spectrum due to heavy usage by existing MSS systems.³ Moreover, the L-band is subject to a unique international coordination agreement that allows the co-frequency reuse and sharing of spectrum by multiple satellite systems and constrains the ability of the U.S. to allow ATC deployment. MSV's proposed ATC system, indeed any ATC system in the L-band, would decrease the highly efficient reuse of L-band spectrum and would disrupt Inmarsat's provision of MSS services.

BACKGROUND

Inmarsat is a global provider of commercial and safety MSS services in the L-band, offering a wide range of mobile communications solutions to customers at sea, on land, and in the air.⁴ Through its satellite system, Inmarsat provides communications services to users such as the U.S. Navy, U.S. Coast Guard and commercial vessels at sea, CNN and the International Red Cross on land, and almost every major airline in the air. Inmarsat's satellite services include telephony, data, e-mail, fax, digitally compressed video, and Internet access to end users where no terrestrially-based communication service will reach. Inmarsat's services are also used

³ See, e.g., *In the Matter of Establishing Rules and Policies for the use of Spectrum for Mobile Satellite Services in the Upper and Lower L-band*, Report and Order at ¶ 9, IB Docket No. 96-132 (rel. February 7, 2002).

⁴ See Comments of Inmarsat Ventures plc at 2-9, IB Docket No. 01-185 (filed Oct. 22, 2001) ("Inmarsat ATC Comments").

for vital aeronautical and emergency services, including the Global Maritime Distress and Safety System.

Inmarsat has coordinated the use of L-band spectrum between 1525-1559 MHz and 1626.5-1660.5 MHz for service in the U.S. and around the world. Inmarsat's nine in-orbit satellites provide worldwide coverage, including service in the United States, using both global beam and spot beam technology. In the next few years, Inmarsat will expanding its network and capacities through the launch of next-generation Inmarsat-4 spacecraft that are designed to provide high-speed, broadband service and that use efficient spot beam technology, which will achieve greater spectrum reuse than ever before.

Unlike other satellite bands, the United States' international obligations regarding the use of the L-band arise not only under the Table of Frequency Allocations of the International Telecommunication Union ("ITU"), but also from a multilateral memorandum of understanding among five administrations with regard to the use of L-band spectrum over North America.⁵ As discussed in Inmarsat's Comments in the *ATC Proceeding*, where ATC use is being considered, that MOU governs the use of the L-band over North America and establishes procedures that the U.S. and its satellite operators must follow in coordinating current and planned uses of the L-band spectrum.⁶

DISCUSSION

Inmarsat supports the Commission's efforts to explore more efficient means of using spectrum resources. However, far from being more efficient, the ATC

⁵ See *ATC NPRM* at ¶ 49; See *International Action: "FCC Hails Historic Agreement on International Satellite Coordination, News Release,"* Report No. IN 96-16 (June 25, 1996) (the "MOU" or "Mexico City MOU").

system proposed by MSV would in fact substantially *reduce* the spectrum efficiency for L-band MSS, because of interference, both into other MSS systems and into MSV's own satellite.

MSV is wrong when it states "ATC will not cause harmful interference to Inmarsat or violate international treaties."⁷ As discussed below and in Inmarsat's filings in the *ATC Proceeding*, because MSV and Inmarsat share spectrum on a co-channel basis, any ATC deployment in the L-band, including that proposed by MSV, would cause harmful interference to Inmarsat. Moreover, terrestrial use of the L-band is neither contemplated nor permitted under the Mexico City MOU.

I. ATC Will Cause Interference To Inmarsat

As Inmarsat has demonstrated in its comments and numerous technical analyses filed in the *ATC Proceeding*,⁸ ATC deployment in the L-band would harm Inmarsat's MSS system in two main respects:

- Inmarsat spacecraft would receive significantly more interference from terrestrial mobile terminals than they would ever receive from the mobile earth terminals of another MSS system. The number of terrestrial terminals

⁶ See Inmarsat ATC Comments at 21-25.

⁷ See MSV Comments at 5.

⁸ See Inmarsat ATC Comments at 12-18, Technical Appendix §§ 3.1-3.5; Reply Comments of Inmarsat Ventures plc at 9-16, 18-20, Supplemental Technical Appendix at §§ 2 and 3, IB Docket No. 01-185 (filed November 13, 2002) ("Inmarsat ATC Reply Comments"); Further Comments of Inmarsat Ventures plc at 3-11, IB Docket No. 01-185 (filed March 22, 2002); *Ex Parte* - Presentation to the Federal Communications Commission at 9-30, IB Docket No. 01-185 (filed February 21, 2002); *Ex Parte* - Quantification of Harmful Co-Channel L-Band Up-Link Interference into Inmarsat-4 From MSV ATC Uses, Versus MSV Mobile Earth Terminal Uses, IB Docket No. 01-185 (filed May 9, 2002); *see also Ex Parte* - Inmarsat Response to MSV *Ex Parte* of March 28 Concerning "Monitoring and Control of Ancillary Terrestrial Emissions by MSV's Space Segment", IB Docket No. 01-185 (filed May 15, 2002) (discussing the inability of MSV to monitor interference).

would far exceed the number of mobile earth terminals that ever could be deployed.

- The powerful signals from terrestrial base stations would overwhelm nearby Inmarsat receive terminals, which are specifically designed to be sensitive enough to receive much weaker signals from geosynchronous satellites – over 22,300 miles away.

In many MSS bands, the FCC has divided spectrum among its licensees on a global basis – providing each operator its own discrete segment of MSS spectrum. In L-band, however, different satellite operators can and do use the same spectrum on a co-channel basis in different geographic locations. Thus, outside the U.S., Inmarsat uses the same spectrum that MSV uses within the U.S.

MSV's ATC proposal calls for it to use the same spectrum that it uses for MSS service in one area for ATC in adjacent geographic areas.⁹ Such terrestrial uses, however, would cause interference to the Inmarsat system both in nearby geographic areas, as well as in distant areas.

(1) In-band signals of ATC mobile terminals *within the U.S.* would interfere with the Inmarsat satellite receivers that are trying to discern signals from ships, planes and land mobile terminals in areas served by Inmarsat *outside the U.S.*¹⁰

(2) Aggregate out-of-band emissions from ATCs *within the U.S.* would interfere with Inmarsat satellites serving ships, planes, and land-based customers *within the U.S.* Each and every ATC mobile terminal within an Inmarsat receive beam, when

⁹ MSV Comments at 6.

¹⁰ Inmarsat ATC Comments at 13-14, Technical Appendix at § 3.1; *Ex Parte – Quantification of Harmful Co-Channel L-Band Up-Link Interference into Inmarsat-4 From MSV ATC Uses, Versus MSV Mobile Earth Terminal Uses* at § 3, IB Docket No. 01-185 (filed May 9, 2002).

transmitting to a terrestrial base station, would contribute to out-of-band interference into Inmarsat's satellites that would disrupt Inmarsat's MSS system.¹¹

(3) High-powered terrestrial ATC base stations would cause harmful in-band and out-of-band interference into nearby Inmarsat mobile terminals.¹² Inmarsat has spent billions of dollars developing an MSS system based on the use of mobile terminals designed to be sensitive enough to receive relatively "weak" signals from satellites 22,300 miles away. The presence of powerful terrestrial ATC base stations transmitting nearby would overwhelm Inmarsat mobile terminal receivers and disrupt communications with spacecraft. Interference to Inmarsat mobile terminals would also be caused by the out-of-band emissions of the ATC base stations.

ATC presents a fundamentally different interference scenario than presented by any MSS use of a frequency band. The interference caused by ATC in the L-band would threaten the commercial and critical safety services provided by Inmarsat. In emergency situations, distress calls from ships at sea or planes in the air may be blocked or need to be repeated, thereby delaying rescue efforts and the provision of vital information to crew members. While ATC would be a different use of MSS spectrum in the L-band, it would not be a more efficient use.

II. ATC Deployment Would Increase MSV's Spectrum Usage

MSV touts the use of ATC as a means of simultaneously re-using spectrum in multiple geographic areas and thereby increasing efficient use of MSS spectrum. As discussed above, highly efficient use of MSS spectrum already occurs in the L-band under the terms of the Mexico City MOU. Contrary to MSV's assertions, in

¹¹ Inmarsat ATC Comments at 14, Technical Appendix at § 3.2.

order to operate its proposed ATC system, MSV would need to coordinate additional MSS spectrum above and beyond what it currently has available. Inmarsat has demonstrated why MSV cannot operate an ATC system without using additional spectrum beyond the spectrum MSV uses for its MSS system.¹³ Fundamentally, the proposed ATC system would cause self-interference into MSV's satellites and therefore MSV would require separate spectrum to operate its ATC system.

Ultimately, if the Commission were to allow ATC in the L-band, it would be at the expense of existing MSS operators. Inmarsat would suffer harmful interference, and Inmarsat services would be subject to disruptions and degradation. At the same time, additional spectrum would need to be coordinated for ATC use. In the spectrum constrained L-band, this could occur only at the expense of other satellite-based operators.

III. Use Of L-Band Spectrum For ATC Violates U.S. International Obligations

MSV also asserts that ATC is consistent with U.S. obligations under the MOU.¹⁴ This, too, is inaccurate. As explained more fully in Inmarsat's comments in the *ATC Proceeding*,¹⁵ MSV's terrestrial proposal is fundamentally inconsistent with both the ITU Table of Frequency Allocations and the MOU.

The MOU expressly obligates the United States to avoid situations, such as the one presented here, that could potentially give rise to unacceptable interference

¹² Inmarsat ATC Comments at 14-16, Technical Appendix at §§ 3.3 and 3.4.

¹³ Inmarsat ATC Comments at 16, Technical Appendix at § 3.5; *Ex Parte – MSV is unable to Operate ATC Without Using Additional Spectrum Beyond That Used for Its MSS System*, IB Docket No. 01-185 (filed May 21, 2002).

¹⁴ MSV Comments at 12.

¹⁵ Inmarsat ATC Reply Comments at 21-25.

into the MSS systems covered by the MOU.¹⁶ As discussed above and in the cited Inmarsat filings, MSV's ATC proposal would cause harmful interference into Inmarsat's MSS operations.

Moreover, the MOU does not require MSS operators to take into account the spectrum needs of terrestrial services in the L-band, and no party has the right to justify its spectrum needs based, in whole or in part, on any terrestrial services that it may desire to propose.¹⁷ The purpose of the MOU is to allow operators to coordinate L-band spectrum between operators based on how much spectrum an operator actually needs to provide its satellite-based MSS service. To allow MSV's proposed terrestrial-based use of the L-band would impermissibly force Inmarsat and other potential MSS providers in the U.S. to shoulder the burden of MSV's attempt to convert the nature of its service from a satellite to terrestrial-based service, and also would contravene existing ITU spectrum allocations.

¹⁶ See *MOU* at ¶ 16.

¹⁷ See *MOU* at ¶¶ 1, 2, 4-8 & 17.

CONCLUSION

Authorizing ATC in the L-band would come at a very high price: harmful interference into MSS satellite services using the L-band, including the disruption of Inmarsat's safety and commercial services on the ground, in the air, and on the sea, both within the U.S. and outside the U.S. Moreover, any use of ATC, whether as an integrated component in MSV's system or by a terrestrial operator, would drain scarce L-band spectrum from its use by existing MSS systems. For these reasons, and others discussed in Inmarsat's many submissions in the *ATC Proceeding*, Inmarsat urges the Commission to maintain the L-band for satellite service only.

Respectfully submitted,

INMARSAT VENTURES, PLC

/s/ Alex Hoehn-Saric

Gary M. Epstein
John P. Janka
Alex Hoehn-Saric
LATHAM & WATKINS
555 Eleventh Street, N.W.
Suite 1000
Washington, D.C. 20004
(202) 637-2200

July 23, 2002