

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

_____)	
In the Matter of:)	
Flexibility for Delivery of Communications by)	
Mobile Satellite Service Providers in the 2 GHz)	IB Docket No. 01-185
Band, the L-Band, and the 1.6/2.4 GHz Band)	
_____)	
Amendment of Section 2.106 of the Commission's)	ET Docket No. 95-18
Rules to Allocate Spectrum at 2 GHz for Use by)	
the Mobile Satellite Service)	
_____)	

To the Commission:

**COMMENTS OF STRATOS MOBILE NETWORKS (USA) LLC
and MARINESAT COMMUNICATIONS NETWORK, INC.**

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SUMMARY

Stratos Mobile Networks (USA) LLC and MarineSat Communications Network, Inc. (collectively "Stratos") hereby file these comments in response to the Commission's Notice of Proposed Rulemaking ("the *NPRM*") in the above-captioned proceedings. The *NPRM* seeks comment on whether the Commission should allow mobile satellite service ("MSS") licensees, in the 2 GHz, Big LEO and L-bands, flexibility to use their authorized frequencies for terrestrial operations in conjunction with the satellite services that are already offered. As the second largest distributor of Inmarsat services in the world, and the largest distributor of the MSS services offered by Motient and Iridium, Stratos understands the typical customer of MSS well and is uniquely positioned in this proceeding to comment on the market and public demand for MSS.

By serving vertical markets with telecommunications services where and when conventional telecommunications, such as landline and terrestrial wireless solutions, are not available, MSS plays a vital role in the global telecommunications network. Indeed, the Commission has repeatedly recognized the value of MSS in providing advanced communications on a global basis. Earlier this month, the Commission took the highly anticipated and significant step of authorizing companies, like Stratos, to operate a wide-range of mobile earth terminals to provide *domestic* MSS via Inmarsat in an effort to increase competition and provide additional services to U.S. consumers. MSS is distributed to a wide range of users who rely on MSS on a daily basis, including governments at the local, state and federal level, and commercial industries, such the shipping, maritime, aeronautical, oil and gas, mining and fishing industries. These customers rely on MSS to provide not only day-to-day communications, but also vital public safety and critical back-up communications. While this proceeding may have been

prompted by the desires of two MSS operators to augment their MSS signals in urban areas and inside buildings, the real demand for MSS is to provide reliable communications in remote areas. The Commission should not jeopardize this core purpose of MSS.

Allowing MSS licensees to provide terrestrial services on an "ancillary" basis, however, will adversely affect MSS users. Stratos acknowledges that a significant market exists for terrestrial mobile services and does not dispute that this market is currently substantially larger than the market for MSS. However, this does not obscure the fact that MSS is relied upon by government and commercial users for critical communications in remote areas throughout the world. Indeed, by allocating spectrum and authorizing licensees to provide MSS, the Commission acknowledged that there was (and still is) a public need for MSS that could not be satisfied by traditional terrestrial communications. Given the large market for terrestrial mobile services, opening up the MSS bands for terrestrial mobile use will only encourage MSS providers to move away from providing MSS and focus their business plans towards the terrestrial mobile services market. The end result will be that terrestrial use will overwhelm the MSS bands. Studies demonstrate, however, that this terrestrial mobile use will cause harmful interference, thereby decreasing the capacity and reliability of the bands for critical MSS communications that protect individuals and equipment operating in remote areas of the world -- a result that is not in the public interest.

MSS also plays a role in providing back-up communications for terrestrial networks. Indeed, the recent September 11th tragedy in New York and Washington, D.C. highlights the critical role that MSS can play as a form of back-up communications in urban centers where terrestrial wireless and landline services are ubiquitously deployed. When terrestrial communications networks were disabled, MSS became the only means of

communications for many in the aftermath of the terrorist strikes. Stratos rushed about four hundred Iridium and Inmarsat terminals to New York and Washington, D.C. to distribute to the United Nations, the U.S. State Department, the FBI and other federal, state and local agencies.

Permitting ancillary terrestrial wireless communications in the MSS bands will create the wrong incentives for MSS operators -- *i.e.*, diverting attention and future investment away from the provision of MSS. Given the critical role that MSS plays in extending telecommunications services to people everywhere, this is not in the public interest. Indeed, it is not even necessary. If MSS providers believe that terrestrial mobile services are necessary to augment the coverage of a deployed MSS system, dual-band technology will permit the use of already allocated terrestrial mobile service spectrum -- spectrum for which substantial investment has already been made. With extensive terrestrial networks for mobile services already deployed throughout the country and the world, the economies of scale, as well as concerns over harmful interference, favor using these terrestrial networks, as opposed to investing in and constructing new ones.

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¹ See *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*, FCC 01-225 (rel. Aug. 17, 2001) ("*NPRM*"). Stratos Mobile Networks (USA) LLC and MarineSat Communications Network, Inc. are both indirectly owned by Stratos Global Corporation, a Canadian corporation.

² See *NPRM* at ¶¶ 3 - 4.

As the second largest distributor of Inmarsat services in the world and the largest distributor of the MSS offered by Motient and Iridium, Stratos is uniquely positioned to comment on the critical role that MSS plays in not only providing day-to-day communications for businesses and government, but in providing vital public safety and back-up communications as well. Indeed, the significant growth in MSS has allowed Stratos to become one of the fastest growing satellite companies in the world.³

The Commission has repeatedly "recognized the value of MSS to provide advanced communications on a global basis to areas that may not be readily or economically served by terrestrial systems, such as rural and remote areas, and to the maritime and aeronautical markets."⁴ Allowing MSS licensees to provide terrestrial services on an ancillary basis would harm MSS users, not help them. Indeed, given the large terrestrial mobile services market that exists, opening up the MSS bands to terrestrial use will create the wrong incentives for MSS providers and will likely lead to the MSS bands being overwhelmed by terrestrial

³ Stratos Global Corporation, the ultimate parent company of Stratos Mobile Networks (USA) LLC and MarineSat Communications Network, Inc., was recently ranked number 1 in a survey of the fastest growing technology companies in Canada. See "Stratos Named Canada's Fastest Growing Technology Company in the 2001 Deloitte & Touche Canadian Technology Fast 50," *Stratos Press Release* (Sept. 21, 2001). In the second quarter of 2001, Stratos Global Corporation experienced more than 100% increase in revenues compared to the second quarter in 2000. Stratos Global Corporation Second Quarter Results at <<http://www.stratos.ca>>.

⁴ *NPRM* at ¶ 1 (citing *Amendment of the Commission's Rules to Establish New Personal Communications Services*, GEN Docket No. 90-314, *Memorandum Opinion and Order*, 9 FCC Rcd. 4957, 4995-96 ¶¶ 94 - 97 (1994); *Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, IB Docket No. 99-81, *Notice of Proposed Rulemaking*, 14 FCC Rcd. 4843, 4846 ¶ 4 (1999); *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service*, ET Docket No. 95-18, *First Report and Order and Further Notice of Proposed Rulemaking*, 12 FCC Rcd. 7388, 7389 ¶ 2 (1997), *on recon.*, *Memorandum Opinion and Order and Third Notice of Proposed Rule Making and Order*, 13 FCC Rcd. 23,949 (1998)).

mobile use. Studies demonstrate, however, that terrestrial use of the MSS bands will cause harmful interference, thereby decreasing the capacity and reliability of MSS for critical communications -- a result that jeopardizes MSS. Rather than deploying a new terrestrial network for ancillary services in the MSS bands, MSS system licensees should avoid harmful interference, and should take advantage of economies of scale, by using the already deployed terrestrial networks for any ancillary services that are needed.

I. PERMITTING TERRESTRIAL MOBILE SERVICES TO OPERATE IN MSS SPECTRUM WILL JEOPARDIZE THE PROVISION OF MSS

Permitting entities to use MSS spectrum to provide terrestrial mobile services, either as an alternative mobile service or in conjunction with satellite services, will significantly reduce the ability of MSS to fulfill its critical mission of providing vital communications to remote users in remote areas throughout the world. "Ancillary" terrestrial mobile services will reduce the amount of spectrum available for MSS and cause harmful interference into MSS operations.

As the Commission acknowledges, this proceeding was prompted by a perceived need to augment the MSS signal in areas where "the satellite signal is attenuated, particularly in urban areas and inside buildings."⁵ As a threshold matter, Stratos questions the public demand for augmenting the MSS signal in "urban areas and inside buildings." Significant investment has already been made in the ubiquitous deployment of terrestrial networks that cover "urban areas and inside buildings." Few users of MSS have a need for MSS in cities or inside buildings in areas covered by terrestrial services because they typically have terrestrial wireless services that

⁵ *NPRM* at ¶ 1.

fulfill this need. The greatest demand for MSS has been for its ability to provide communications in remote areas. The Commission should not jeopardize this core function and purpose of MSS by authorizing terrestrial services in the MSS bands.

A. MSS Provides Critical Services To Individuals and Entities Operating in the U.S. and Throughout the World

MSS customers range from governments at the local, state and federal level to individuals to multi-billion dollar companies. All of these customers share one thing in common -- they rely on MSS for communications in environments and situations where other forms of communications are not available or are simply not reliable. However, MSS is relied upon not only for routine government or business operations, but during emergencies on land, sea and in the air. In many areas where terrestrial communications are unavailable, MSS is *the* method of communication.

For example, the U.S. Department of Defense is the largest user of commercial MSS in the world. With communications needs that are global in reach and require reliability, access and security in remote areas of the world, MSS is uniquely positioned to satisfy the "mission critical" needs of the U.S. military.⁶ Similarly, other government agencies, such as the Federal Emergency Management Agency, as well as domestic and worldwide relief organizations, rely on MSS because of its ability to provide communications capability in inaccessible locations and emergency situations.

⁶ See "DoD Awards \$72 Million Contract to Revamped Iridium," Satellite Today (Dec. 7, 2000) ("The Iridium service is attractive to DoD to provide communications for personnel whose duties take them to places where conventional phone service is not available. The Navy will gain most from the Iridium service, since it needs more than twice as much capacity as it now has, Pentagon officials said. Special Forces, combat search and rescue activities and polar communications also will be enhanced by the Iridium service, they added.").

In areas where there is no cellular or landline telecommunications service, commercial industries, such as the shipping, maritime, aeronautical, oil and gas, mining and fishing industries, heavily depend on MSS to conduct their operations efficiently, reliably and as a way to maintain the safety of employees and their significant investment in infrastructure. For example, in the maritime industry, Inmarsat terminals deployed on ships operating throughout the world, including the coast of the U.S., help to provide reliable distress communications. Indeed, as a signatory to the Safety of Life at Sea Convention ("SOLAS"), the United States has "agreed to provide a comprehensive international safety communications system, known as the Global Maritime Distress and Safety Service (GMDSS) system that is carried over the INMARSAT satellite system."⁷ GMDSS represents the *only* system providing comprehensive international maritime safety communications.⁸ Since "[e]very ship of the United States subject to part II of title III of the Communications Act or the Safety Convention"⁹ is required to comply with the Commission's regulations for implementing GMDSS, the Commission must be wary of any proposal which threatens MSS -- the very heart of safety at sea.

⁷ *AT&T Corporation Application for Authority under Section 214 of the Communications Act, as amended, to Discontinue the Offering of High Seas Service and to Close its Three Radio Coast Stations (KMI, WOM and WOO)*, 14 FCC Rcd. 13225, 13233 (1999) (citing The International Maritime Organization International Convention for the Safety of Life at Sea (SOLAS) (Edition, London 1997)).

⁸ *AT&T Corporation Application for Authority under Section 214 of the Communications Act, as amended, to Discontinue the Offering of High Seas Service and to Close its Three Radio Coast Stations (KMI, WOM and WOO)*, Order on Reconsideration, DA 01-1619 at ¶ 24 (rel. July 10, 2001).

⁹ See 47 C.F.R. Part 80, Subpart W at General Provisions and § 80.1065 et seq.

The oil and gas industry relies on MSS not only for daily operations in coordinating drilling and geological exploration, but for safety and emergency communications that involve life-threatening situations and serious environmental risks. The need and demand for MSS is clear. When other forms of communications are unavailable, MSS is relied upon to provide a vital communications link to protect life and property.

The need for MSS, however, is not limited to communications in remote or inaccessible areas, but it also serves an important function as a form of back-up communications. This was clearly demonstrated on September 11th when other communications facilities, including terrestrial wireless and landline facilities, were knocked out or overloaded. In an effort to satisfy the communications needs of rescue workers and government officials, Stratos employees rushed about four hundred MSS mobile terminals to New York and Washington, D.C. to provide Iridium and Inmarsat MSS to the United Nations, the U.S. State Department, the FBI and other government agencies at the federal, state and local level. In an area of New York that was devoid of terrestrial and landline communications, these MSS terminals provided a critical communications link. In the words of one news agency: "One of the most useful tools in the Sept. 11 tragedy were the 50 satellite phones that Iridium sent to government officials, who dispensed them to the Pentagon, National Guard and other needy federal agencies."¹⁰ Other news reports highlight the increased demand for MSS in the wake of September 11th:

In the hours after the attacks, people turned to satellite phones when traditional cellular networks were overloaded with calls. . . . Now, soldiers, intelligence officers and members of the media are

¹⁰ "Insider Notes from United Press International for Sept. 24," United Press International (Sept. 24, 2001).

purchasing satellite phones to keep in contact as they fan out to remote areas of the globe in anticipation of U.S. military action.¹¹

Satellite phones provided a vital communications link during the September 11 catastrophe in New York and Washington, sparking renewed interest in two struggling companies in the sector.¹²

With the critical role that MSS plays for industry and government, it would not be in the public interest for the Commission to jeopardize the provision of MSS.

B. The MSS Bands Should Not Be Used For Terrestrial Wireless Mobile Services

Using the MSS bands for terrestrial mobile services will have the unintended consequence of harming the provision of MSS in the U.S. and throughout the world for at least three reasons.

First, it has taken numerous years of negotiations at various World Radiocommunications Conferences ("WRCs"), the FCC and at other national and regional levels to obtain global frequency allocations for MSS. However, a FCC authorization of ancillary, or alternative, mobile use of MSS spectrum is likely to spur similar action throughout the world and upset the delicate balance that was reached at these negotiations -- reducing the amount of MSS spectrum available for global MSS systems. Indeed, such risks are greater in other countries which do not have strong MSS users who champion the service. In those countries, MSS

¹¹ "Satellite Phone Companies Rebounding," The San Diego Union-Tribune at C1 (Sept. 29, 2001).

¹² "Satellite Phones Find Renewed Interest in Wake of September 11 Assault," Agence France Presse (Sept. 28, 2001).

spectrum is more likely to be reallocated to other services than to be opened up to MSS licensees for "ancillary" terrestrial uses.

Second, technical showings, previously provided to the Commission, demonstrate that using MSS spectrum for an ancillary terrestrial mobile use is not possible without causing harmful interference to MSS. The interference not only affects the MSS system deploying the ancillary service, but other deployed MSS systems as well. According to the technical studies submitted by Inmarsat, "the Motient proposal has the potential to reduce the level of reuse [in the MSS frequency bands] and thereby the capacity available to MSS systems."¹³ Indeed, the cumulative interference caused by numerous terrestrial mobile terminals operating in the MSS bands could severely compromise the provision of reliable MSS.¹⁴

In addition to the interference caused by numerous terrestrial mobile terminals, "the power level of the transmissions from terrestrial base-stations could block the down-link to MSS terminals operating near to the base stations by overloading the sensitive receiving amplifiers of the MSS terminals."¹⁵ The technical issues identified by Inmarsat demonstrate that use of the MSS spectrum for terrestrial service will effectively block operators from using that spectrum for reliable MSS operations -- the intended use of the MSS bands. This result is hardly

¹³ Inmarsat Partial Petition to Deny at 7 (April 18, 2001).

¹⁴ *See id.* at 8. ("Even though the interference level from a single mobile terminal may be low, however, the aggregate interference from a large number of mobile stations could still degrade the reuse level of the Motient system.").

¹⁵ *Id.* at 9. *See also id.* at 10 ("Both the degradation of co-channel up-link reuse and the adjacent channel blocking of the down-link described above would affect the total availability of spectrum for all MSS operators. If terrestrial use of the L-Band MSS spectrum increases the interference levels to the extent that reuse between certain satellite beams is no longer feasible, this will cause a serious reduction of the already limited amount of spectrum available to MSS.").

surprising since MSS satellites and handsets were not designed to accommodate terrestrial operations in the MSS bands.

The existence of harmful interference to MSS operations in the U.S. is particularly troubling since the Commission has just taken the highly anticipated and significant step of authorizing companies, like Stratos, to operate a wide-range of mobile earth terminals to provide *domestic* MSS via Inmarsat.¹⁶ In the words of the Commission, it granted this authority because it would "serve the public interest by increasing competition and providing additional services for U.S. consumers."¹⁷ However, the harmful interference caused by terrestrial mobile services in the MSS bands threatens to undo the very public interest benefits the Commission just affirmed.

Third, terrestrial mobile use of MSS spectrum is likely to lead to large scale deployment of terrestrial mobile services in the MSS bands, not enhancement of MSS. Stratos acknowledges that a significant market exists for terrestrial mobile services, and it does not dispute that this market is substantially larger than the market for MSS. However, this does not obscure the fact that MSS is relied upon by government and commercial users for critical communications throughout the world. Indeed, by allocating spectrum for MSS and issuing licenses, the Commission acknowledged that there was (and still is) a public need for MSS that could not be satisfied by traditional terrestrial communications.

¹⁶ See *In the Matter of Comsat Corporation d/b/a Comsat Mobile Communications et al.*, FCC 01-272 (rel. Oct. 9, 2001).

¹⁷ *Id.* at ¶ 1.

Given the large market for terrestrial mobile services, opening up the MSS bands for terrestrial mobile use will only encourage MSS providers to move away from the provision of MSS and focus their business plans towards the terrestrial mobile services market. The end result will be that terrestrial use will overwhelm the MSS bands. As a result, financial investment by MSS providers, and manufacturers of MSS equipment, will move away from MSS and towards terrestrial mobile services. With decreased investment, MSS networks will be compromised and lack the necessary technological innovations to keep up with demand. Such a result would not be in the public interest since it would jeopardize the on-going viability of MSS and the valuable role that it plays in the communications network.

II. MSS SYSTEM LICENSEES CAN OFFER DUAL-BAND TERMINALS TO PROVIDE ANCILLARY TERRESTRIAL MOBILE SERVICES USING EXISTING TERRESTRIAL ALLOCATIONS

If MSS providers want to incorporate terrestrial mobile services into their MSS offerings, they can incorporate dual-band technology that uses spectrum already allocated for terrestrial mobile services. Rather than making a significant investment in base station deployment to establish a brand new terrestrial mobile network, MSS providers can tap into the substantial investment that has already been made in terrestrial mobile services in this country and around the world. Indeed, Iridium previously provided MSS/GSM service. The economies of scale favor using already existing terrestrial service providers and their substantial investment, as opposed to expending new resources to create new terrestrial mobile networks that use MSS spectrum.

By pointing to the financial troubles of Iridium and Globalstar, MSS providers have suggested that providing a dual-band service is somehow inefficient and a "fatal strategy

for a satellite system."¹⁸ However, it is well-documented that the financial troubles of these companies have been due to equipment and service costs, not because of their dual-band service offerings. There is nothing efficient about using MSS spectrum for terrestrial uses if, as demonstrated by Inmarsat, it will only cause interference and reduce the reliability of MSS.

In contrast, dual-band service to provide ancillary terrestrial mobile services, is an efficient use of resources and spectrum. Numerous national providers of terrestrial mobile services have extensive roaming agreements in the U.S. and the world. Accordingly, by entering into one agreement, an MSS provider can satisfy its customers' ancillary terrestrial mobile service needs *without* making any investment to build out a new terrestrial network and *without* compromising the capacity and reliability of MSS.

MSS spectrum was allocated for MSS, not terrestrial mobile services. Ancillary mobile use could become so extensive, with investment in MSS diminished, that it results in overshadowing the provision of MSS. Genuine MSS usage by MSS providers may become an afterthought or abandoned altogether. This result is not in the public interest because of all the critical functions that MSS serves.

III. CONCLUSION

MSS is a critical service that serves an indispensable role in the communications network for both government, commercial and emergency communications that protect human lives and property every day. Using MSS spectrum for terrestrial mobile services is likely to

¹⁸ Consolidated Opposition to Petitions to Deny and Reply to Comments of Motient, Mobile Satellite Ventures Subsidiary LLC and TMI Communications and Company at 10 n.16 (May 7, 2001).

leave too little remaining MSS spectrum for reliable communications, as well as upset carefully crafted spectrum plans in the U.S. and throughout the world.

Given the reliance on MSS by government and commercial users, it is not in the public interest to jeopardize these services. Sufficient spectrum for ancillary mobile services exists in other frequency bands that can be used for terrestrial mobile services without putting MSS at risk. The Commission should reject the proposals to use MSS bands for terrestrial mobile services, and affirm the critical function that MSS serves in the global telecommunications network.

Respectfully submitted,

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