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Before The
FEDERAL COMMUNICATIONS COMMISSION
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FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of	)	
	)	
The Establishment of Policies and	)	
Service Rules for the Mobile-Satellite	)	IB Docket No. 99-81
Service in the 2 GHz Band	)	
	)	

PETITION FOR RECONSIDERATION

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SUMMARY

Based on recent developments in wireless services, Globalstar, L.P., petitions for reconsideration of two aspects of the Report and Order adopting rules and policies for the Mobile-Satellite Service ("MSS") in the 2 GHz frequency bands.

First, the Clinton Administration has asked the Commission, the National Telecommunications and Information Administration, and other government agencies to identify spectrum for Third Generation ("3G") terrestrial wireless telecommunications systems and to establish policies promoting these services. Satellite systems serving U.S. markets need compatible allocations and technical capabilities to deliver services equivalent to those of terrestrial wireless systems, particularly in rural and undeserved communities. The 2 GHz MSS band plan does not guarantee 2 GHz MSS systems sufficient bandwidth to fulfill this need.

Achieving the same capacity with smaller bandwidths would result in penalties in terms of total system costs. Even then, 2 GHz MSS systems may not be able to maintain a high degree of commonality with leading terrestrial wireless technologies to reduce the design and production costs of equipment. Therefore, the 2 GHz MSS band plan impedes satellite systems from achieving the same level of service as terrestrial systems under the White House 3G initiative.

The 2 GHz MSS band plan also does not result in maximum use of the spectrum. Each authorized system will be guaranteed only a small spectrum segment, and the Commission declined to adopt a procedure for redistribution of frequencies assigned to systems that do not implement. While operational systems

can use other spectrum on a secondary basis, unless such systems can coordinate use of the spectrum with other operational systems, none can use spectrum outside its own assignment. But, the Commission declined to require 2 GHz MSS systems to adopt system designs that can be coordinated. Even if systems with compatible technical designs are launched, the spectrum selection process may preclude compatible systems from obtaining contiguous spectrum assignments.

To mitigate these problems, the Commission should license systems from the perspective of the 3G services that consumers will demand and that economically viable next-generation MSS systems will have to provide. The Commission should adopt the "all shared band plan," proposed by Globalstar, that encourages 2 GHz MSS systems to choose technologies that share spectrum.

Second, the Commission should abandon the rural set-aside for 2 GHz MSS licensees. The rationale for adopting the set-aside is inconsistent with Commission policy established just prior to the adoption of the rules for 2 GHz MSS. Specifically, the Commission recently decided that spectrum set-asides for service to specific geographic areas should not be adopted outside the context of a national spectrum plan, and found that set-asides alone do not promote service. The set-aside for 2 GHz MSS is directly contrary to this policy, particularly since spectrum is not awarded on the basis of actual service to rural areas.

Moreover, the geographic coverage standards adopted for 2 GHz MSS require licensed systems to incorporate the technical capability to provide service to all areas within the 50 United States, Puerto Rico and the U.S. Virgin Islands.

Therefore, a set-aside for service to specific geographic areas does not have any effect on a licensee's business decision to make MSS available throughout the United States. Moreover, given the economics of satellite services, 2 GHz MSS licensees will focus their marketing efforts on rural and underserved areas where they have an advantage in cost or quality of service over terrestrial providers. The 2 GHz MSS spectrum set-aside is thus contrary to Commission policy and not needed to accomplish its purpose.

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PETITION FOR RECONSIDERATION

Pursuant to Section 1.429 of the Commission's Rules (47 C.F.R. § 1.429), Globalstar, L.P., by its undersigned attorneys, petitions for reconsideration of the Report and Order released August 25, 2000, in the above referenced docket.[1] Globalstar is an applicant to provide Mobile-Satellite Services ("MSS") at 2 GHz, and filed comments and reply comments on the Notice of Proposed Rulemaking in this docket[2] and supplemental comments on the International Bureau's proposed hybrid band plan for 2 GHz MSS systems.[3] Globalstar seeks reconsideration on the following issues.

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[1] Report and Order, FCC 00-302 (released Aug. 25, 2000) ("Order"). Public Notice of the rules adopted in the Order appeared in 65 Fed. Reg. 59140 (Oct. 4, 2000).

[2] See The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band, 14 FCC Rcd 4843, 4857-64 (1999) ("2 GHz NPRM").

[3] See Public Notice, 15 FCC Rcd 2696 (Int'l Bur. 2000).

First, the band plan for 2 GHz MSS adopted by the Commission must be modified because the plan does not comport with the Administration's policy on development of Third Generation wireless services. The plan also fails to achieve optimum use of the spectrum, and, in fact, will result in valuable 2 GHz MSS spectrum being severely underutilized or lying completely fallow. In its stead, the Commission should adopt the "all shared band plan" advocated by Globalstar.

Second, the Commission should abandon its policy of reserving spectrum for 2 GHz MSS licensees that commit to serve rural and underserved areas. The Commission has already decided in another context that such policies are not warranted and do not result in delivery of new service to rural and underserved areas.

I. THE 2 GHz MSS BAND PLAN SHOULD BE MODIFIED TO ENSURE EFFICIENT USE OF THE AVAILABLE SPECTRUM.

The Commission has adopted a band plan for 2 GHz MSS systems that severely and unnecessarily restricts the use of the available spectrum for MSS licensees and for delivery of Third Generation ("3G") services to the U.S. public. Under the band plan, the 2 GHz MSS uplink and downlink bands will be subdivided into bandwidth segments equal to the number of licensed systems plus one.[4] Each operator will choose a "home segment" from the available spectrum when it launches its first satellite (the "Selected Assignment"). However, each operator will

[4] The additional segment is intended to accommodate a set-aside for 2 GHz MSS operators committing to serve rural and underserved areas. See Order, ¶ 16.

also be permitted to operate outside its Selected Assignment anywhere in the 2 GHz MSS spectrum on a secondary basis to any system for which such segment is its Selected Assignment spectrum. Additionally, each operating system may use any spectrum in coordination with other licensees. By adopting this plan, the Commission has attempted to give the maximum number of systems access to as much spectrum as possible. But, the practical effect of this plan is a failure to address the likely future market for satellite-delivered services. Consequently, under this plan 2 GHz MSS operators are denied access to the spectrum necessary to deliver the services that consumers will want.

A. The 2 GHz MSS Band Plan Does Not Adhere to Clinton Administration and Commission Policy Favoring Delivery of Next Generation MSS Services.

Since release of the Order in this proceeding, the Clinton Administration has asked the Commission, the National Telecommunications and Information Administration, and other affected government agencies to identify spectrum available for Third Generation, terrestrial wireless telecommunications systems and to implement policies that will roll-out these services expeditiously. As NTIA Administrator Greg Rohde pointed out, in the next ten years, two-thirds of the revenues for wireless services will come from Internet and data services.

> [W]hat this means is the electronic commerce is strictly becoming mobile commerce and the Internet is getting wings. And, ... if the United States does not understand ... this trend, [then] we will quickly fall behind and fall

> into a competitive disadvantage. So, that's why this is so important.[5]

Obviously, if satellite systems are going to deliver services equivalent to those offered by terrestrial wireless systems under this new initiative, particularly in rural and underserved communities, then satellite systems must have a similar, compatible allocation and similar technological capability.

The 2 GHz MSS band plan is plainly flawed for the purposes of developing 3G satellite services because, simply put, wider bandwidth is critical to delivery of 3G services. As explained earlier in this docket by Globalstar,[6] Internet service offerings most popular with consumers require bandwidths on the order of 10-15 MHz. Multimedia applications for handheld terminals such as videoconferencing, distance learning, and interactive services also require a minimum of 10-15 MHz. With 3.5 MHz, the amount presumptively available to each licensee under the Commission's 2 GHz MSS band plan, or even 5 MHz, the next generation of satellite systems would be restricted to voice and lower speed data services. In other words, with access guaranteed to only 3.5 MHz of spectrum, 2 GHz MSS systems can only plan to offer services that were available 10 years ago, rather than five years into the future.

Alternatively, to achieve the same capacity with smaller bandwidths, the 2 GHz MSS spacecraft would have to be outfitted with costly antennas employing

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[5] The White House, Press Briefing on Third Generation Wireless Technology (Oct. 13, 2000) (available at www.whitehouse.gov).

[6] See Supplemental Comments of Globalstar, L.P., at 4-10 (Feb. 17, 2000).

an unreasonably high number of beams. The greater number of beams requires greater complexity in the system; and, an increased handoff rate would result in a lower quality of service for users in the United States. In addition, achieving the same capacity with smaller bandwidths would require stringent code and frequency planning parameters and a complex user terminal design.

Thus, even if a satellite system could provide the 3G services that consumers will demand in this limited bandwidth, the operators and their investors will be severely penalized in terms of total system cost. This is not how one designs a viable satellite system. Given the large investment required for a satellite system, the key to success is a high-quality, low-cost, and hence affordable, system design. An operator can keep costs down by (i) leveraging its existing terrestrial infrastructure (*i.e.,* Gateways), (ii) maintaining a high degree of commonality with leading terrestrial wireless technologies to reduce the design and production cost of multi-mode handsets, (iii) incorporating flexibility to avoid the high cost -- or impossibility -- of subsequent upgrades of the space segment, and (iv) designing the subscriber terminals to take advantage of multiple, competing product vendors.

Compatibility with terrestrial wireless technology is a very important factor in the viability of MSS. The ITU has completed work on the International Mobile Telecommunications for the Year 2000 ("IMT-2000") Project. Five Radio Transmission Technologies ("RTTs") for the terrestrial component of IMT-2000 have been approved, and will be standardized by regional standardization bodies such as the Telecommunications Industry Association ("TIA") in the United States for use in

the 3G spectrum identified at the 2000 World Radio Conference pursuant to the Clinton Administration initiative. For MSS operators to establish economically efficient 3G services, they must plan to deploy a radio technology that is compatible with terrestrial wireless, or risk incurring substantial expenses for development of individualized technology.

At least one of the five terrestrial RTTs requires channels of 5 MHz. Therefore, a 2 GHz MSS system which is assigned 3.5 MHz segments would be precluded from following this terrestrial technology and limited in choice of vendors. In this way, the bandwidth constraints have a substantial impact on system design and the financial viability of the proposed business. As a result of adopting the 2 GHz MSS band plan, it is very likely that the Commission will impede access to 3G services over satellite systems operating at 2 GHz for U.S. consumers, even though that result would be inconsistent with the White House policy initiative.

B. The 2GHz MSS Band Plan Results in an Inefficient Use of Spectrum.

A successful band plan for multiple satellite systems must provide each system with access to sufficient spectrum to establish a viable business and ensure that the available spectrum is used efficiently. In the Order, the Commission adopted rules which are designed to facilitate maximum access to, and use of, the

available 2 GHz MSS spectrum. However, these rules do not accomplish the Commission's goals.[7]

At licensing, each 2 GHz MSS system will become entitled to an assignment of an equal segment from the available bandwidth, which it can choose upon launch. Each operational 2 GHz MSS system is authorized to use its Selected Assignment on a primary basis. It can also use the Selected Assignments of other operational systems on a secondary basis or in coordination with that system, and it can use any unselected spectrum on its own or in coordination with other systems. In theory, under this plan, each licensee will have access to its own spectrum when its system becomes operational, and can put to use the entire band, at its own, very significant, risk.

There are significant flaws in this plan. As the Commission recognizes, not all licensed systems will become operational. However, the Commission did not adopt a procedure for redistribution of frequencies assigned to systems that do not implement. Order, ¶ 18. Therefore, licensed systems cannot plan for additional primary spectrum, and operational systems have no mechanism available to expand their primary services.

Moreover, while operational systems can use other spectrum on a secondary basis, unless such systems can coordinate use of the spectrum with other

[7] The Commission describes the frequency assignments under the 2 GHz MSS band plan as providing spectrum sufficient "to commence operations." Order, ¶ 17. Nowhere in the discussion does the Commission suggest that the spectrum assignments available under the band plan are sufficient for commercial implementation or to fulfill the goals similar to those of the White House initiative.

operational systems, none can use spectrum outside its Selected Assignment. In fact, it is likely that spectrum will lie fallow because the Commission specifically declined to require 2 GHz MSS systems to adopt system designs that can be coordinated. Order, ¶ 26. Therefore, an operational system can be limited to its Selected Assignment indefinitely, and can be blocked from using spectrum outside its Selected Assignment because it has an incompatible design as to other operational systems.[8]

Even if systems with compatible technical designs are launched, under the 2 GHz MSS band plan, they may not be able to share spectrum. As each system launches, it chooses a band segment within which to operate. This selection process may preclude compatible systems from obtaining contiguous spectrum assignments, which, in turn, would preclude the systems that want to share from enjoying the benefits of increased spectrum bandwidths. Accordingly, the rules governing the 2 GHz MSS band plan severely restrict access to spectrum, to the detriment of licensees' and the public's use of this valuable resource.

C. The Commission Should Adopt the All-Shared Band Plan.

Throughout this proceeding, Globalstar has recommended an "all shared band plan," which would remedy defects in the adopted band plan identified above.

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[8] It might seem counterintuitive for one system to block another system from gaining access to additional spectrum at the cost of restricting its own access to spectrum. However, some of the 2 GHz MSS applicants have indicated that they require less spectrum than others to establish a viable business, and, therefore, may not be harmed by this strategy.

Under this plan, all licensed 2 GHz MSS systems would be authorized to operate across the entire available spectrum. This eliminates the possibility that some spectrum would lie fallow because the frequencies were assigned to a system that is not implemented. This plan also eliminates the problems of non-contiguous spectrum assignments and incompatible designs: if all systems are authorized to use the same frequencies across the United States, then they obviously must coordinate use of contiguous frequencies from the outset or risk not having any spectrum to use when operational.

Curiously, the Commission identified this requirement of preoperational coordination as a reason for not adopting the all shared band plan. According to the Commission, the negotiations could drag on without resolution, and such coordination would require abandonment of the principle of not imposing technical parameters on licensees. Order, ¶ 26. However, the plan the Commission adopted is the worst of all worlds because, on the one hand, it still requires negotiations among licensees to operate outside their Selected Assignments (with no more incentive to agree), and it does nothing to discourage systems from adopting incompatible system designs, eliminating any basis on which to coordinate. The long-term solution can only be further band segmentation, not what the Commission has in mind.[9]

[9] In this regard, the all shared band plan does no more to impede technology neutrality than does the adopted band plan.

The Commission also stated that the 2 GHz MSS band plan would allow operational systems access to spectrum needed to offer 3G services. Order, ¶ 27. However, as discussed above, that is problematic because of the difficulties coordinating use of the spectrum under the Commission's approach.

Rather than approaching rules for a band plan from the perspective of what enables all systems to be licensed, the Commission must approach licensing alternatives for 2 GHz systems from the perspective of the 3G services that consumers will demand and that economically viable next-generation MSS systems will have to provide. The White House initiative has emphasized the point that wireless systems of the future must provide consumers with a full complement of 3G services, and, therefore, the Commission must adopt band plans that encourage 2 GHz MSS systems to choose technologies that share spectrum. Accordingly, the Commission should reconsider its band plan for 2 GHz MSS and adopt the "all shared band plan" proposed in Globalstar's comments in this rulemaking.

II. THE SPECTRUM SET-ASIDE FOR RURAL AND UNSERVED AREAS SHOULD BE ABANDONED AS CONTRARY TO THE PUBLIC INTEREST.

In the Order, the Commission decided to set aside one frequency segment, equivalent to the bandwidth assigned each licensed 2 GHz MSS system, to be awarded as expansion spectrum to those licensees that commit to serve rural and unserved areas. To be eligible, a licensee must demonstrate that 10 percent of its contracted U.S. capacity is committed to service providers "that offer 2 GHz MSS services in unserved or rural service areas." Order, ¶ 36. The percentage dedicated

to such service areas is determined by multiplying the total amount of capacity covered by a contract by the percentage of the service provider's market area that falls within a Rural Service Area ("RSA"). The RSAs cover approximately 20 percent of the United States population. For the reasons outlined below, this set-aside is contrary to the public interest and should be abandoned.

A. The Rationale for the Rural Set-Aside Is Arbitrary and Capricious and Contrary to Commission Policy.

The Commission's rationale for incorporating a set-aside into the 2 GHz MSS band plan consists of one sentence: "By providing a spectrum-based incentive beyond a provider's selected assignment, we can encourage systems to consider deployment of service to unserved areas in the early business planning and system design phases." Order, ¶ 40.

This rationale is inconsistent with Commission policy established just prior to the adoption of the rules for 2 GHz MSS. In a proceeding in which the Commission considered how best to extend wireless services to tribal areas, the Commission determined that allocations of spectrum for specific geographic areas are not warranted.

> We agree with commenters who oppose the allocation of new spectrum for tribal lands alone, arguing instead that spectrum policy should be set on a national basis, in a proceeding that enables us and interested parties to consider competing needs and spectrum demands and develop the most appropriate national policies for licensing spectrum. Furthermore, we are not convinced that the lack of spectrum is a dispositive factor in the provision of service to tribal lands and other unserved areas.

> We further agree with commenters who contend that allocating frequencies to provide new wireless services would not necessarily be effective in promoting the provision of cellular service to tribal lands and that more allocations do not guarantee more service.[10]

In other words, less than two months before it adopted the 2 GHz MSS band plan, the Commission made a policy decision that spectrum set-asides for service to specific geographic areas should not be adopted outside the context of a national spectrum plan, and found that set-asides alone do not promote service.

The set-aside for 2 GHz MSS is directly contrary to this policy, and illustrates the Commission's finding that such set-asides are not designed to achieve service goals. The 2 GHz MSS spectrum reservation is not awarded on the basis of actual service to RSAs. Rather, it is awarded for entering into a contract that covers service to certain geographic regions. Although the Commission plans to require reports of the amount of service provided to RSAs, there is no mechanism to require actual delivery of such service. Therefore, service to rural areas will not be a necessary result of the set-aside program.

The Commission certainly has the authority to adopt spectrum set-asides. However, it cannot establish programs based on predictions that are "peculiarly without foundation."[11] Here, the set-aside spectrum is contrary to Commission policy, and not likely to obtain the intended service benefit. Therefore, the

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[10] Extending Wireless Telecommunications Services to Tribal Lands, Report and Order, WT Dkt. No. 99-266, ¶¶ 56-57 (released June 30, 2000).

[11] Bechtel v. FCC, 10 F.3d 875, 887 (D.C. Cir. 1993).

Commission should treat it in accordance with the policy established in the tribal lands rulemaking, and forego the 2 GHz MSS set-aside.

B. The Spectrum Set-Aside for Service to Rural Areas Is Unnecessary and Inconsistent with Its Purpose.

For 2 GHz MSS, the Commission has adopted geographic coverage standards that require all licensed 2 GHz MSS systems to incorporate the technical capability to provide service to all areas within the 50 United States, Puerto Rico and the U.S. Virgin Islands. Order, ¶¶ 55-60. Therefore, a set-aside for service to specific geographic areas does not have any effect on a licensee's business decision to make MSS available throughout the United States. That availability is mandated for all 2 GHz MSS systems by the geographic coverage standards.

In any event, 2 GHz MSS licensees already have economic incentives to incorporating unserved areas into a business plan without the Commission establishing rural set-aside. Satellite-delivered voice and data services are complementary to terrestrial wireline and wireless services. Satellite service providers generally cannot offer subscriber rates for mobile services and equipment that are as low as terrestrial wireless and wireline services in medium- and high-density markets. Therefore, satellite service providers must focus their marketing efforts where they have an advantage in cost or quality of service -- in rural and underserved areas.

The 2 GHz MSS band plan, perversely, makes service to rural areas more difficult. For example, the Commission declined to adopt any technical design

requirements to facilitate shared use of spectrum. Order, ¶ 26. As a result, each system can assume that it will have a only small amount of guaranteed spectrum with which to provide a nationwide service. By thus limiting the amount of guaranteed spectrum, the Commission has potentially made each system more expensive. That is, the overwhelming majority of the costs of satellite systems are incurred to build and launch the spacecraft, and these will be incurred no matter what service is provided. However, designing a system to use less spectrum for the capacity necessary to achieve economic viability increases these costs because the system must make up the lack of spectrum in other elements, for example, number of beams, requiring a more complicated antenna system on the spacecraft and on the ground. If costs of the system increase, system operators must increase costs for service. Thus, a business plan focused on areas with fewer subscribers to recover these higher costs becomes non-viable.

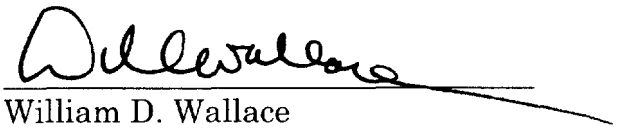
Ultimately, the likely outcome from implementation of the set-aside conflicts with the stated purpose of the rule. Therefore, the rule should be abandoned. The Commission can and should assume that 2 GHz MSS operators will make an effort *sua sponte* to serve rural areas. Rather than taking spectrum away from operators through set-asides, it should make all spectrum available from the outset so that licensees can plan for and design more economical and effective systems.

III. CONCLUSION

For the reasons set forth above, the Commission should adopt the "all shared band plan" for 2 GHz MSS and should abandon the set-aside for service to rural and unserved areas.

Respectfully submitted,

GLOBALSTAR, L.P.



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CERTIFICATE OF SERVICE

I, William D. Wallace, hereby certify that I have on this 3rd day of November, 2000, caused to be served true and correct copies of the foregoing "Petition for Reconsideration" upon the following parties via hand delivery to the following persons:

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