

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

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**MAY - 4 1998**

Federal Communications Commission  
Office of Secretary

In the Matter of

**Iridium, L.L.C.**

Application for Authority  
To Launch and Operate the  
MACROCELL Mobile  
Satellite System

Received  
MAY - 7 1998

Satellite Policy Branch  
International Bureau

File No. 187-SAT-P/LA-97(96)

**PETITION TO HOLD IN ABEYANCE  
OF THE BOEING COMPANY**

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**PETITION TO HOLD IN ABEYANCE  
OF THE BOEING COMPANY**

The Boeing Company ("Boeing"), by its attorneys and pursuant to Section 25.154 of the Commission's Rules, 47 C.F.R. § 25.154, hereby petitions to hold in abeyance the above-captioned application of Iridium L.L.C. ("Iridium").<sup>1</sup>

**I. INTRODUCTION & SUMMARY**

Boeing is an applicant in the 2 GHz Mobile-Satellite Service ("MSS") proceeding<sup>2</sup> seeking to launch and operate a MSS system to provide a satellite-based

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<sup>1</sup> See Public Notice, "Satellite Policy Branch Information: Satellite Applications and Letters of Intent Accepted for Filing in the 2 GHz Band," Report No. SPB-119 (March 19, 1998) (indicating that comments or petitions must be filed by May 4, 1998, oppositions must be filed by June 3, 1998 and replies must be filed by June 18, 1998).

<sup>2</sup> See Public Notice, "Cut-off Established for Additional Space Station Applications, Letters of Intent, and Amendments to Pending Applications in the 2 GHz Frequency Band," 12 FCC Rcd 10446, 10446 (1997).

infrastructure for aeronautical communication and navigation services worldwide.<sup>3</sup> Boeing's proposed system would greatly increase air safety, efficiency and capacity, allowing a greater number of aircraft to provide services to consumers with a much higher level of safety.

A substantial need exists for Boeing's MSS system. The number of people utilizing air travel is increasing substantially, placing stress on existing aeronautical communication and navigation systems, particularly in developing areas of the world. Boeing's proposed MSS system can greatly alleviate this problem by providing a space-based aeronautical communication and navigation infrastructure that is capable of providing services to airlines and air traffic authorities worldwide. In light of the substantial worldwide public interest need for Boeing's proposed system, Boeing herein focuses its comments on Iridium's application on the steps available to the Commission to encourage efficient use of spectrum and accelerate the grant of authorizations in the 2 GHz MSS proceeding.

First, the Commission should address Iridium's "blanket" request for expansion spectrum in the 2 GHz band only after accommodating the modest spectrum needs of Boeing's satellite-based aeronautical communication and navigation system. Second, the Commission should hold Iridium's application in abeyance while a Notice of Proposed Rulemaking ("NPRM") is released immediately proposing financial qualification rules for 2 GHz MSS. Such measures will encourage the prompt

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<sup>3</sup> See *The Boeing Company, Application for Authority to Construct, Launch and Operate a Non-Geosynchronous Satellite System in the 2 GHz Mobile-Satellite Service and the*  
(Continued . . .)

development of additional competitive MSS systems, while fulfilling the pressing communication and safety needs of global aviation.

**II. THE COMMISSION SHOULD ADDRESS IRIDIUM'S "BLANKET" REQUEST FOR EXPANSION SPECTRUM ONLY AFTER FULFILLING THE MODEST CAPACITY NEEDS OF BOEING'S SATELLITE-BASED AERONAUTICAL COMMUNICATION AND NAVIGATION SYSTEM.**

While Boeing has no *per se* objection to grant of Iridium's application, Boeing urges the Commission to address Iridium's request only after fulfilling the modest spectrum requirements of Boeing's satellite-based aeronautical communication and navigation system. Important public interest considerations support satisfying Boeing's spectrum needs on a priority basis. First, global demand for Boeing's system already exists, and is increasing daily. As Boeing explained in its September 26, 1997 application, existing Communication, Navigation, Surveillance/Air Traffic Management ("CNS/ATM") systems are in need of new technology and increased capacity.<sup>4</sup>

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( . . . Continued)

*Aeronautical Radionavigation-Satellite Service*, FCC File No. 179-SAT-P/LA-97(16) (Sept. 26, 1997).

<sup>4</sup> See *Avoiding Aviation Gridlock: A Consensus for Change*, National Civil Aviation Review Commission, Preliminary Finding Task Force Report, Pt. II (Introduction) at 1 (Sept. 10, 1997), available on Internet at <http://www.awgnews.com/faa/faa.htm> ("NCARC Gridlock Report") (concluding that due to inadequate air traffic management systems and airports "the United States' aviation system is headed toward gridlock shortly after the turn of the century"); *Final Report to President Clinton*, White House Commission on Aviation Safety and Security, at 17 (Feb. 12, 1997) (concluding that while the current air traffic system in the United States remains safe, it is essential that it be modernized).

Additionally, air traffic loads are expected to increase dramatically in the coming decade,<sup>5</sup> a projection reiterated by Vice President Al Gore in recent weeks.<sup>6</sup>

In contrast, while consumer demand is projected to exist for Iridium's proposed services the demand is only a projection, not an existing need. Furthermore, even if sizable consumer demand does materialize, the demand can be initially accommodated using the spectrum capacity granted to Iridium in the Big LEO proceeding.

This leads to the second reason why Boeing's application should be given priority treatment – Boeing is seeking a modest portion of the 2 GHz band (less than 9 MHz in each direction) in order to satisfy conservative estimates of the existing requirements of the aviation industry. In contrast, Iridium is seeking expansion spectrum for a MSS system that has yet to provide services to consumers. Furthermore, rather than provide the Commission with a conservative estimate of its future spectrum needs, Iridium made a “blanket” request for authority to use almost all of the 2 GHz spectrum available.

Iridium fails to justify this sizable spectrum request. In its application, Iridium discusses industry growth projections for the entire wireless and MSS market. Iridium fails to adequately take into account, however, the significant number of independent MSS systems (both Big LEOs and geosynchronous MSS systems) and terrestrial-based

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<sup>5</sup> See *NCARC Gridlock Report*, Pt. II (introduction) at 1 (citing a finding by the 1997 World Development Survey that the world's air travelers are expected to double from one billion to more than two billion over the next twenty years).

<sup>6</sup> See *Remarks by Vice President Al Gore and Secretary of Transportation Rodney Slater*, Federal News Service, Apr. 14, 1998 (projecting a 60% increase, from 600 million to one billion, in annual domestic airline passengers by 2010).

mobile communication systems that will be competing, or, in the case of terrestrials, already are competing for customers.

Furthermore, the Commission should exercise caution in relying on market projections. As the Commission tentatively concluded in the Little LEO proceeding, "it is not in the public interest for this Commission to hold additional spectrum for existing licensees on the basis of speculative long-term traffic projections."<sup>7</sup> Such a finding is particularly applicable to the 2 GHz proceeding, which, like the Little LEO proceeding, involves a communications service that arguably has never been tested in the market.<sup>8</sup> Accordingly, while Boeing does not oppose allocation of expansion spectrum to Iridium, such spectrum should be allocated only after the Commission accommodates the modest spectrum capacity needs of Boeing's MSS system.

**III. IN ORDER TO EXPEDITE THE PROVISION OF URGENTLY NEEDED 2 GHz MSS SERVICES THE COMMISSION SHOULD HOLD IRIDIUM'S APPLICATION IN ABEYANCE WHILE IT PROCEEDS IMMEDIATELY TO ADOPT FINANCIAL RULES FOR 2 GHz MSS SYSTEMS.**

Iridium is one of nine applicants seeking Commission authority to use a limited spectrum resource allocated to MSS in the 2 GHz band. Unfortunately, more MSS systems have been proposed in the 2 GHz proceeding than can be accommodated in the spectrum available in this processing round. Furthermore, unlike prior MSS proceedings

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<sup>7</sup> *Non-Voice, Non-Geostationary Mobile Satellite Service*, 11 FCC Rcd. 19841, 19853 (1996).

<sup>8</sup> The issue of whether MSS has been tested in the market appears to depend on whether the service is defined as "handheld MSS" or "vehicular MSS." Clearly, the market for handheld MSS has not been tested. In contrast, the market for vehicular MSS has, up until now, been weak. *See, e.g., AMSC Subsidiary Corp.*, DA 98-493, ¶¶ 6-9 (March 13, 1998) (noting less than expected demand).

in which it could be anticipated that additional spectrum would become available for later applicants, the 2 GHz proceeding comes at a time when no significant allocations of additional MSS spectrum below 3 GHz are on the horizon.

Aggravating the spectrum shortage is the pressing need to authorize and launch new MSS systems on a highly expedited schedule. Expedited treatment is warranted because of the important public safety and communication services being proposed and the opportunity to create new competition. For example, Boeing's proposal will greatly enhance the safety and efficiency of the world's airways through the development of a global satellite infrastructure for aeronautical communication and navigation services. Delay in approving Boeing's system will unnecessarily extend the public's dependence on outdated and sometimes inadequate air traffic control technology and equipment.<sup>9</sup>

Accordingly, the Commission should accelerate the licensing of urgently needed 2 GHz MSS systems by holding Iridium's application in abeyance while a NPRM is released immediately for the sole purpose of establishing on an expedited basis financial rules for qualified 2 GHz applicants. Immediate action on financial rules is appropriate for a number of reasons.

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<sup>9</sup> The need for expedited action on Boeing's application is evidenced by recent requests for industry information issued by the National Reconnaissance Office ("NRO RFI") and the Air Force on the possibility of constructing a satellite-based navigation augmentation system for the Global Positioning System ("GPS"). See Air Force, Space and Missile Systems Center, Request for Information, 2070 Commerce Business Daily, Apr. 9, 1998; National Reconnaissance Office, Request for Information, "*Wide Area Augmentation System (WAAS) Space Segment Service*," 2010 Commerce Business Daily, Jan. 13, 1998. The NRO RFI indicated that a suitable satellite infrastructure needs to be operational by October 2001. Boeing has included a WAAS payload in its 2 GHz MSS system proposal and is exploring its options to meet the NRO's deadline.



First, with estimated costs of as much as \$4 billion,<sup>10</sup> the MSS systems proposed in this proceeding will be tremendously expensive to deploy. Potentially added to these costs are terrestrial operators in the 2 GHz band that have been seeking compensation for relocation expenses.<sup>11</sup> In order to ensure that authorized systems are capable of financing these potential expenses (and in order to avoid shifting a disproportionate share of any terrestrial relocation costs onto 2 GHz licensees that are adequately financed)<sup>12</sup> the Commission should promptly adopt financial qualification rules for 2 GHz MSS systems.

Second, it is highly unlikely that a spectrum sharing compromise can be reached in this proceeding unless negotiations between the applicants are limited to those parties that are financially qualified. Boeing has studied the potential for 2 GHz spectrum sharing and it appears evident that the authorized spectrum is inadequate to satisfy pending requests. Thus, rather than refraining from adopting financial rules for 2 GHz

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<sup>10</sup> See *ICO Services Limited, Letter of Intent to Provide Mobile-Satellite Service To, From and Within the U.S. Market Within the 2 GHz Frequency Band*, 188-SAT-LOI-97 at 4 (Sept. 26, 1997).

<sup>11</sup> Boeing notes, however, that a recently released technical study conducted by COMSAT Laboratories may significantly mitigate the problem of terrestrial relocation.

<sup>12</sup> While the Commission has proposed to require all MSS licensees to divide the costs of relocation, the Commission left open the possibility that late entering MSS licensees may be permitted to forego participation in the initial relocation and, instead, compensate earlier MSS operators for their share of the relocation costs. See *2 GHz Mobile Satellite Service, Further Notice of Proposed Rulemaking*, 12 FCC Rcd 7388, 7418 (1997). Permitting late entrants to avoid participation in the initial efforts, however, will give late entrants an unfair competitive advantage by greatly streamlining the deployment process for their systems. Furthermore, by permitting late entrants to compensate initial entrants, initial entrants will essentially be required to finance some of the development costs of late entrants. The Commission should take steps to avoid such an inequitable result by discouraging late entry by 2 GHz MSS licensees. This can be done through the use of financial requirements that reduce the likelihood that licenses will be issued to parties that are unable to promptly construct and launch their systems.

applicants until later in this proceeding, the Commission should further the public interest by immediately releasing an NPRM proposing such rules for 2 GHz MSS.

The third reason for immediate action on 2 GHz MSS financial requirements is because the Commission has already devoted exhaustive time and attention to crafting financial rules for satellite licensees. Spanning more than a decade of deliberations, the Commission has repeatedly concluded that an applicant's financial capacity is a "significant factor" in determining whether it is qualified to hold a license.<sup>13</sup> This is because "licensees without sufficient available resources spend a significant amount of time attempting to raise the necessary financing and [] those attempts often end unsuccessfully."<sup>14</sup>

In adopting financial requirements, the Commission generally utilizes two types of showings: a stringent financial requirement<sup>15</sup> and a less stringent requirement.<sup>16</sup> In this

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<sup>13</sup> *Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, 9 FCC Rcd 5936, 5948-5949 (1994) ("*Big LEO Order*").

<sup>14</sup> *Id.* (citing *National Exchange Satellite, Inc.*, 7 FCC Rcd 1990 (Com. Car. Bur. 1992); *Rainbow Satellite, Inc.*, Mimeo No. 2584 (Com. Car. Bur., Feb. 14, 1985); *United States Satellite Systems, Inc.*, Mimeo No. 2583 (Com. Car. Bur., Feb. 14, 1985) (domestic satellite licenses declared null and void for failure to begin implementation as required by license)). In addition, Geostar Corporation, a start-up company licensed in the radiodetermination satellite service, declared bankruptcy nearly five years after its licenses were issued.

<sup>15</sup> Stringent financial requirements are utilized when mutual exclusivity exists and issuance of a license to an under-financed applicant "may preclude a fully capitalized applicant from implementing its plans, and service to the public may be consequently delayed." *Big LEO Order* at 5948. In such cases, applicants have been required to provide evidence of assets, revenues, or irrevocably committed debt or equity financing "sufficient to meet the estimated costs of constructing and launching all planned satellites, and operating the system for the first year." *Id.*

proceeding, use of a stringent financial requirement is clearly warranted. The number of 2 GHz applicants and the amount of spectrum requested greatly exceeds the capacity of the 70 MHz available. Furthermore, as noted above, the systems proposed by the applicants will be tremendously expensive to construct and launch and may be accompanied by significant expenses for terrestrial relocation.<sup>17</sup>

While in the past the Commission has attempted to alleviate mutual exclusivity through formal and informal negotiations between applicants, such efforts have invariably resulted in considerable delay in the provision of services, ultimately harming consumers. For example, in the Big LEO proceeding, which was begun in 1991, the adoption of financial requirements was delayed until 1994. If such rules had been in place earlier in the proceeding, the initiation of services to consumers may have been significantly advanced. As it stands now, however, no Big LEO system is providing services to the public, although the inauguration of the first system is projected for the fall of this year.

The Commission should avoid such protracted delays in the 2 GHz MSS proceeding by acknowledging that the available 2 GHz spectrum is inadequate to accommodate pending requests and that the public interest would be served by immediately adopting financial requirements. In order to accomplish this, Boeing urges

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(. . . Continued)

<sup>16</sup> A less stringent requirement is used when issuance of a license to an under-financed applicant will not preclude financially qualified proposals. In such cases, the particulars of the financial showing vary depending upon the services proposed. *Id.*

<sup>17</sup> *See id.* 5949-5950 (referring to the enormous costs of Big LEO systems as supporting the adoption of stringent financial requirements for licensees).

the Commission to hold Iridium's application in abeyance while a NPRM is immediately released for the sole purpose of setting financial requirements for 2 GHz MSS systems.

#### **IV. THE COMMISSION SHOULD REQUIRE IRIDIUM TO EXPLAIN ITS PROPOSED USE OF MULTIPLE SIGNAL CODING TECHNIQUES.**

In its application, Iridium indicates that it intends to employ both code-division multiple access ("CDMA") and time-division multiple access ("TDMA") technologies. While Boeing does not believe the Commission generally should dictate which access technique should be used in a given satellite service, Boeing finds it surprising that Iridium is proposing to use both methods. The Commission recently concluded in the Big LEO proceeding that TDMA/FDMA systems could not share spectrum with either CDMA or other TDMA/FDMA systems.<sup>18</sup> Accordingly, Boeing believes that the Commission should require Iridium to explain how it intends to use both techniques in the same spectrum. Additionally, Iridium should be required to disclose the amount or percentage of the proposed capacity that will be used for each access technique. It is important for Iridium to provide this information so that the Commission can accurately assess the ability of Iridium to share the 2 GHz spectrum with other applicants in this proceeding.

#### **V. CONCLUSION**

For the reasons stated above, the Commission should address Iridium's "blanket" request for expansion spectrum only after the modest spectrum capacity needs of Boeing's urgently needed aeronautical communication and navigation system are

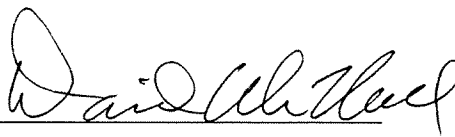
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<sup>18</sup> See *id.* at 5942.

satisfied. Additionally, the Commission should hold Iridium's application in abeyance pending the adoption of financial qualification rules for 2 GHz MSS systems. Such measures will encourage the prompt development of additional competitive MSS systems, while fulfilling the pressing communication and safety needs of global aviation.

Respectfully submitted,

**THE BOEING COMPANY**

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CERTIFICATE OF SERVICE

I, Anne Rutherford hereby certify that the attached pleading of The Boeing Company was send by hand delivery to the following:

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