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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
 Motient Services, Inc., )  
 and )  
 Mobile Satellite Ventures )  
 Subsidiary LLC )  
 Application for Assignment of Licenses and )  
 For Authority to Launch and Operate a )  
 Next-Generation Mobile Satellite Service System )

Received

MAY 23 2001

Satellite Policy Branch  
International Bureau

File No. SAT-ASG-20010302-00017

REPLY OF AERONAUTICAL RADIO, INC.

Aeronautical Radio, Inc. ("ARINC"), by its attorneys, hereby replies to the Consolidated Opposition to Petitions to Deny and Reply to Comments submitted jointly by Motient Service, Inc., TMI Communications and Company, Limited Partnership, and Mobile Satellite Ventures Subsidiary LLC (hereinafter "Motient").

Motient, in its Opposition, utterly fails to dispel the concerns raised by ARINC, Inmarsat Ventures, PLC ("Inmarsat"), and SITA Information Networking Computing Canada, Inc. ("SITA"), who use the L-band mobile-satellite service ("MSS") allocation for critical aviation safety-of-life communications that would be impaired, were the Commission to authorize terrestrial land mobile use of this MSS allocation. The burden is on Motient to establish that the public interest would be served by the extraordinary waiver of the FCC and International Telecommunication Union's Tables of Frequency Allocations. Motient falls short of what is required. The small world-wide

MSS allocation at L-band is needed—and intensively used—for mobile-satellite services in areas of the world that cannot be reached by terrestrial systems and should not be reallocated to a regional terrestrial land mobile service. Aviation has invested hundreds of millions of dollars in the global AMS(R)S system operating in protected L-band spectrum. The public interest would not be served by taking this vital spectrum away from MSS or by adding new terrestrial services in this band.

**I. Motient Has Not Shown That Public Interest Would Be Served by Its Proposal**

Motient is licensed to operate a continental/domestic MSS system using up to 20 MHz of the L-band MSS allocation as may be coordinated with other users of this band. Its application requests the addition of terrestrial-based land mobile services to this band. Land mobile radio services are not permitted by either the FCC or the International Telecommunication Union (“ITU”) Tables of Frequency Allocations. Therefore, a waiver of these rules would be required, Motient has the burden of proving both that the public interest would be served and that extraordinary circumstances exist that would make a waiver appropriate. The Court of Appeals has characterized the waiver process as a “safety valve procedure for consideration of an application for exemption *based on special circumstance.*” *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *cert. denied*, 409 U.S. 1027 (1972) (emphasis supplied). The circumstances presented by Motient are not special. The limitations of MSS coverage in urban areas were raised and addressed when the current allocation was adopted.<sup>1</sup>

Motient’s public interest argument is unpersuasive. Motient argues that: (1) domestic mobile-satellite services are in the public interest; (2) such a limited MSS system is unattractive to

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<sup>1</sup> See, e.g., Land Mobile Satellite Allocation Order, 2 FCC Rcd 1825, 1843 (1986).

users unless it could also provide terrestrial land mobile services in order to get increased revenues: and (3) the combined MSS/terrestrial system is spectrally efficient.

Motient asserts that the services it is currently providing to customers in remote areas of the United States are important to those users, but concedes that this is a small number of users. ARINC does not dispute the need for communications in remote areas, but this is a thin market, and the system must be sized adequately to address the depth of the market. This lack of a sizable market for land mobile-satellite services was also fully investigated in the rulemaking leading up to the licensing of Motient, and Motient made its investments based on a full understanding of the market and the technical limitations of its system.

Motient now claims that unless it is permitted to use its MSS-licensed spectrum to provide a GSM terrestrial cellular service, it may be unable (or unwilling) to launch its second generation spot-beam satellite. Motient has presented nothing to support this assertion. Motient must have market studies and financial data that would support its claims, but has not shared this with the Commission or the parties to this proceeding.

A review of the potential market and how it may be divided between terrestrial and satellite services is critical. Experience to date indicates that market for wireless services in the urbanized areas, which Motient would serve by its proposed terrestrial stations, is many, many times larger than that in the more remote areas, which may or may not require MSS. Without historic market data and reasonable projections of use, it is impossible to determine whether Motient plans to provide terrestrial land mobile with a small amount of satellite fill-in or an MSS system with a little terrestrial fill-in. Everything in the application and logic indicates that Motient plans the former rather than the latter.

If, as we suspect, terrestrial service will predominate in Motient's new system, MSS will be pushed out of the L-band MSS allocation by the terrestrial mobile services. However, this L-band allocation is vital for aviation and maritime safety communication. Aviation has made large investments in equipment and technology to utilize a global AMS(R)S network in L-band, and the continued availability of L-band for this system is essential to international airborne commerce. Aviation requires a world-wide spectrum allocation and a fully coordinated communication system that complies with the Standards and Recommended Practices ("SARPs") of the International Civil Aviation Organization ("ICAO"). Motient has never provided such a service, and nothing in its application indicates any realistic intention to do so with its next generation system.

Motient wants its satellite phones to be useable in urban areas, but a satellite phone can be easily designed to use cellular, PCS, or 3G terrestrial mobile facilities to complement its mobile-satellite service. Motient has not explained what is different now than during the rulemaking proceeding, in which this subject was fully discussed and where the applicants in that proceeding asserted that they planned to provide dual mode satellite/cellular telephones in order to achieve urban coverage. Motient argues that only recently did it develop an understanding of the market, but this market for, and the limitations on, MSS was thoroughly discussed in the rulemaking proceeding. Satellite coverage has never been particularly good in urban areas or in buildings, and Motient's predecessors in interest asserted that they could provide adequate coverage. If urban coverage were the only market problem that Motient faced with its service, it would have offered dual mode phones many years ago. If terrestrial land mobile, as a supplement to its mobile satellite service, would provide the salvation for Motient, why have they not tried it?

Moreover, rural America will not be denied access to MSS even were Motient not to launch replacement satellite. Inmarsat has the capacity to provide service to mobile earth terminals in

remote areas of the United States. Iridium has been rescued from bankruptcy and can also provide service. At least one commenter, Deere & Company, has stated that it would prefer to use Inmarsat over Motient.<sup>2</sup> While the public interest is served by assuring some wireless communications to rural and remote areas of the United States, a grant of the requested waiver is not required to insure the continued availability of wireless coverage across the nation.

Motient's answer to the obvious solution of dual mode mobiles is an off-handed comment that they can provide terrestrial land mobile service with no additional spectrum and that it is more efficient to operate using spectrum not otherwise usable in their spot beam satellite system.<sup>3</sup> However, the urban market, the market to be covered by the terrestrial based stations, is much larger than the rural, satellite-served market. Therefore, the demand for channels in urban areas will be substantially greater than the channels committed to the spot beams in other parts of the country. Motient's claim of spectral efficiency is not borne out by any analyses or any projections. What we are left with is an shameless attempt to reallocate the band to terrestrial services.

Moreover, as ARINC showed in its initial comments, Motient concedes that it must provide co-channel protection to users of other satellite systems and the terrestrial base stations would preclude use by aviation of those channels for a distance of more than 300 miles off shore. Motient does not offer any analysis of this co-channel problem, asserting only that the problem will be solved by international coordination. To avoid aircraft receiver desensitization near airport, Motient admits that it would have to use "micro/mini base stations radiating much lower EIRP levels."<sup>4</sup>

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<sup>2</sup> See Comments of Deere & Company at 3-4

<sup>3</sup> Motient Application, App. A at 3.

<sup>4</sup> Motient Opposition, App. A at 6.

Motient gives no hint at how much the EIRP would have to be reduced. As a minimum, need to do analyses and tests would be necessary to determine what the channel separation and power limits should be, if any terrestrial operation were to be permitted.

Too many questions are raised but unanswered by the Motient Application. First, how should the frequencies be partitioned? Which frequencies would be available for Motient land mobile and which would be for aviation, and which would be for maritime? How do we protect our safety services and the investments that have been made in them?

L-band is currently shared with Inmarsat and Volna. In addition, other MSS applicants could be licensed to share L-band in the future, because the FCC has determined that anyone not interoperable with the international aeronautical mobile satellite system would have to operate on a secondary basis,<sup>5</sup> and Motient has never provided interoperable aeronautical service. What sharing criteria would be appropriate?

Motient concedes that its terrestrial base stations cannot operate co-channel with other systems; what siting criteria should be established to prevent co-channel and adjacent channel interference to safety services? Should the base stations be licensed to an area or should each be individually licensed to ensure protection to other systems? Motient alludes to tests that it has run with mobile satellite receivers. These tests have not been submitted or reviewed by aviation or the FCC. What do they show and what more would be necessary?

Simply put, services that can best be provided by mobile satellite will continue to be available whether or not Motient continues to operate a satellite system only as long as L-Band is reserved for mobile satellite services. A greater threat to the availability of satellite services is

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<sup>5</sup> 47 C.F.R. §2.106 US308.

presented by diversion of a major portion of the very limited global mobile satellite L-Band spectrum from mobile satellite services to land mobile services and the potential for interference to critical safety-of-life services by Motient's proposed terrestrial base stations. The Motient Application raises too many unanswered questions. The public interest would not be served by the proposed waiver.

## **II. Terrestrial Base Stations Proposed by Motient Would Violate the FCC and ITU Tables of Frequency Allocations**

Motient repeats its half-hearted assertion that a waiver of the rules might not be required because the ITU Radio Regulations currently permit terrestrial aeronautical mobile (R) service use in parts of this band when used to extend or supplement the aeronautical satellite service.<sup>6</sup> As shown by Inmarsat, the Motient request is not in the spirit of the limited aeronautical exception.<sup>7</sup> The aeronautical exception for terrestrial use was adopted in 1971 in the context of a proposed exclusively aeronautical AMSS(R)S system that would be operated for the benefit of aviation and subject to ICAO SARPs. One possible configuration under consideration in 1971 would provide oceanic-only coverage for satellites and to use the terrestrial links as back-up to VHF terrestrial links over land. These links could only be used for safety and regularity of flight under very limited and controlled circumstances. The terrestrial use would only have been used where other means of communications failed. This is not the type of service proposed by Motient.

Motient is proposing a commercially provided system that, for the most part, would not be subject to ICAO-adopted aviation safety regulations. The terrestrial service would predominate in

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<sup>6</sup> ITU Radio Regulations S5.337, S5.376 (1998)

<sup>7</sup> Inmarsat Partial Petition to Deny at 4-5.

the proposed Motient system and would threaten to preempt the entire allocation for a secondary terrestrial system that duplicates available service. Moreover, the interference potential from a terrestrial land mobile system into an aeronautical system is simply too great to be permitted.

### **III. The L-band MSS Allocation Should be Retained for MSS**

In response to the suggestions of the terrestrial land mobile carriers, Motient correctly points out that L-band is needed for MSS and should not be reallocated to terrestrial land mobile, and that to do so would be in derogation of the International Table of Frequency Allocations and would be impossible to coordinate.<sup>8</sup> For these reasons, the waiver should also be denied. L-band is currently heavily used by MSS operators. Motient is constantly complaining that it cannot secure sufficient spectrum to support its present operations. The frequencies are not underutilized and the suggestions, perhaps facetious, of the terrestrial wireless carriers that the FCC consider reallocation should also be rejected.

### **IV. Conclusion**

Motient's request for waiver of the FCC and ITU Tables of Frequency Allocations should be denied. Motient may combine terrestrial services with its MSS system today by using existing cellular or PCS facilities. ARINC does not deny the need for wireless communications services in remote areas of the United States, but these services are available today and can continue to be available without granting the Motient waiver. Motient has not overcome its "high hurdle" for showing "special circumstances" that would warrant a grant of a waiver of the Rules of the FCC and the ITU. Granting the Motient waiver would, however, imperil the availability of satellite

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<sup>8</sup> Motient Opposition at 9-14.

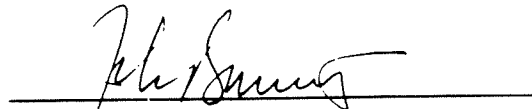


communications in the oceanic regions of the world where they are needed for the safety of life and property in the air.

Respectfully submitted,

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May 21, 2001

CERTIFICATE OF SERVICE

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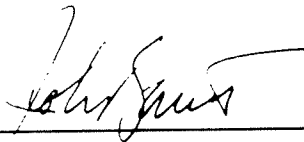
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