

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

|                                             |   |                      |
|---------------------------------------------|---|----------------------|
| In the Matter of                            | ) |                      |
|                                             | ) |                      |
| Review of Part 87 of the Commission's Rules | ) | WT Docket No. 01-289 |
| Concerning the Aviation Radio Service       | ) |                      |

**COMMENTS OF  
THE BOEING COMPANY**

Sheldon R. Bentley  
Senior Manager  
Spectrum Management and Radio Services  
Shared Services Group  
The Boeing Company  
P.O. Box 3707, MC 3U-AJ  
Seattle, WA 98124-2207  
(253) 657-6713

David A. Nall  
Bruce A. Olcott  
Aspa Paroutsas  
Squire, Sanders & Dempsey L.L.P.  
1201 Pennsylvania Avenue, N.W.  
P.O. Box 407  
Washington, D.C. 20044-0407  
(202) 626-6600

Its Attorneys

March 14, 2002

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## SUMMARY

The Commission wisely recognizes in its Notice of Proposed Rule Making (“*NPRM*”) on Part 87 of its rules that the adoption of technology should not be impeded by outdated regulations. Instead, the Commission should update its rules for the Aviation Radio Service to reflect recent technological advances and to ensure that its Part 87 rules are consistent with the Commission’s other regulations. For example, nearly a decade has passed since the Commission created its rules for the Aeronautical Mobile Satellite (Route) Service (“*AMS(R)S*”). Since that time, new technologies have been developed enabling aeronautical communications services to be provided more efficiently using new signal modulation techniques and innovative orbital configurations. Additionally, the Commission has concluded that *AMS(R)S* can be provided in additional frequency bands. Part 87 should be amended to account for these technological advances and to conform with the Commission’s recent decisions.

The Commission should also amend its rules to permit certification of dual channel spacing transceivers to accommodate equipment designed to operate in countries that have implemented a 8.33 kHz channel plan. As proposed by the Commission, Section 87.137 should be amended to include 8.33 kHz channel spacing in the A3E class. The Commission should also amend Section 87.137 to include additional emission types that reflect the use of different digital modulation/protocol modes. The amended rule would assist airframe and avionics manufacturers that are required to deliver aircraft radio systems that support multiple kinds of communication methods to meet the global needs of their aviation customers.

The Commission should also take steps to eliminate portions of Part 87 that are out of date or otherwise unnecessary. For example, the allocation in the 14000-14400 MHz frequency band that is included in Section 87.187(x) for airborne radionavigation devices is unused in Region 2. The Commission should delete the reference in Section 87.187(x), along with a similar reference in the U.S. Table of Allocations.

The Commission also proposed in its Notice of Proposed Rule Making (“*NPRM*”) to restructure its certification requirements for equipment that is subject to Federal Aviation Administration (“FAA”) review. While Boeing supports the Commission’s goal of streamlining its certification process, Boeing is concerned that the proposal that is included in the *NPRM* may inadvertently increase delay and expense for applicants, while placing additional administrative burden on the FAA. Boeing therefore requests that the Commission address this concern before making any changes to its equipment certification process.

Finally, the Commission should conclude that it does not have statutory authority to auction licenses for Unicom stations. Boeing opposes the auctioning of spectrum that is earmarked for the public good. Unicoms are intended for communications involving the safety of life, health and property and, as a result, clearly qualify as a public safety radio service. Furthermore, Unicoms are covered under the express language of the statutory exemption for public safety radio services that is included in the Communications Act. Instead, the Commission should adopt measures that avoid mutual exclusivity with respect to Unicom applications.

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**COMMENTS OF  
THE BOEING COMPANY**

The Boeing Company (“Boeing”), by its attorneys and pursuant to Section 1.415 of the Commission’s Rules, 47 C.F.R. § 1.415, hereby provides comments in response to the above-referenced Notice of Proposed Rulemaking (“*NPRM*”).<sup>1</sup>

**I. INTRODUCTION**

Boeing is filing these comments in order to assist the Commission in its goals of updating its rules for the Aviation Radio Service to reflect recent technological advances and to ensure that its Part 87 rules are consistent with the Commission’s other regulations.<sup>2</sup> Boeing is participating in this proceeding in its role as the largest aerospace company in the world and the global leader in the design and manufacture of commercial aircraft. Boeing is a key player in the development and implementation of aviation

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<sup>1</sup> Boeing informally provided advance copies of these comments to representatives of the Federal Aviation Administration (“FAA”), Air Transport Association (“ATA”), International Air Transport Association (“IATA”), and Arinc.

<sup>2</sup> See *NPRM*, ¶ 1.

standards and procedures, contributing to International Civil Aviation Organization (“ICAO”) panels<sup>3</sup> and RTCA Special Committees and Task Forces.<sup>4</sup>

Boeing is also participating in this proceeding as a satellite network licensee. Boeing is authorized by the Commission to launch and operate a mobile satellite service (“MSS”) network in the 2 GHz MSS band, which Boeing designed to provide CNS/ATM services to the aviation industry. Boeing also holds blanket FCC licenses to provide aeronautical mobile satellite services (“AMSS”) in the United States on a non-conforming basis in the Ku-band. As such, Boeing is uniquely qualified to contribute to the Commission’s efforts in this proceeding.

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<sup>3</sup> Boeing’s participation in ICAO forums is through Boeing’s membership in the International Coordinating Council of Aerospace Industries Associations (“ICCAIA”). ICCAIA is an international consortium of Aerospace Industries Association (“AIA”) and the equivalent aerospace trade associations of Canada, Japan, and Europe. AIA is the United States trade association representing the nation’s leading manufacturers of commercial, military, and business aircraft and related components and equipment. Boeing personnel participate as members, advisors, and observers on various panels related to air traffic management, communication, navigation and surveillance (“CNS/ATM”).

<sup>4</sup> RTCA, Inc. is a private, not-for-profit organization that addresses requirements and technical concepts for aviation. The RTCA studies and prepares recommendations on aviation standards that are used by the FAA to develop regulations. Boeing is a member of RTCA and has positions on its Board of Directors, the Program Management Committee and the Free Flight Steering Committee, as well as membership or chairmanship on many of the RTCA Special Committees and Working Groups, including Special Committee 185, which developed RTCA DO-237 (Aeronautical Spectrum Planning for 1997-2010). Boeing engineers also contribute to airline avionics standards development through the Airlines Electronic Engineering Committee (“AEEC”).

**II. THE COMMISSION SHOULD UPDATE ITS RULES FOR AMS(R)S TO REFLECT REVISED INDUSTRY STANDARDS, ALONG WITH THE COMMISSION’S RECENT DECISIONS REGARDING THE SERVICE.**

As the Commission acknowledges in its *NPRM*, nearly a decade has passed since the Commission created its rules for the Aeronautical Mobile Satellite (Route) Service (“AMS(R)S”). When the Commission created these rules in 1992, it did so “to promote the interests of safety and regularity of flight and of spectrum efficiency, *while allowing flexibility of system design and variety in the services offered.*”<sup>5</sup> The Commission should now update its rules to ensure that the flexibility and variety that were first envisioned remain available to accommodate improved technology.

**A. The Commission Should Enable the Use of Non-Geostationary Satellite Networks for the Provision of AMS(R)S.**

When the Commission created its rules for AMS(R)S, it crafted them solely for satellite networks using geostationary (“GSO”) platforms. The Commission’s decision was not surprising. The Part 87 rules for AMS(R)S were developed following the adoption of five orders that, *inter alia*, regulated the provision of AMS(R)S by American Mobile Satellite Corporation (“AMSC”) and, on international flights, by Inmarsat.<sup>6</sup>

The Commission modeled its rules on the draft Minimum Operational Performance Standards (“MOPS”) for AMSS that were prepared by Special Committee 165 of RTCA, Inc.<sup>7</sup> The Commission also made its requirements consistent with the

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<sup>5</sup> *Technical Standards and Licensing Procedures for Aircraft Earth Stations*, 7 FCC Rcd 5895, 5896 (1992) (“*AES Order*”) (emphasis added).

<sup>6</sup> *See Technical Standards and Licensing Procedures for Aircraft Earth Stations*, Notice of Proposed Rule Making, 5 FCC Rcd 3933, 3933 (1990).

<sup>7</sup> *See AES Order* at 5895, n.11.

Standards and Recommended Practices (“SARPs”) developed by the Aeronautical Mobile Communications Panel (“AMCP”) of ICAO and the Inmarsat System Definition Manual for AES (“Inmarsat SDM”).<sup>8</sup>

The RTCA MOPS, ICAO SARPs and Inmarsat SDM focused solely on the technical specifications for GSO networks using a single frequency band. More recently, both RTCA and ICAO have been addressing the provision of AMSS and AMS(R)S by NGSO satellite networks in other frequency bands. Boeing and other U.S. satellite network licensees have participated extensively in these deliberations.

ICAO’s AMCP has prepared amendments to the SARPs, which were considered by the ICAO Air Navigation Commission.<sup>9</sup> In addition, RTCA Special Committee 165 has developed new MOPS for next generation satellite systems.<sup>10</sup> The new MOPS are intended to serve as generic requirements, which can be made applicable to satellite systems operating in any orbital configuration or frequency band through the addition of technology-specific attachments. Recognizing the work of RTCA and ICAO, the Commission should update its rules for AMS(R)S to reflect the potential use of NGSO networks.

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<sup>8</sup> *See id.* at 5898.

<sup>9</sup> The ICAO Air Navigation Commission has deferred consideration on formal adoption of the amendments to Annex 10, Part 1, Volume III, Chapter 12 of its SARPs until a new satellite system proposal is presented to ICAO for formal consideration.

<sup>10</sup> *See Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS)*, RTCA DO-262 Change 1 (Nov. 28, 2001); *Minimum Aviation System Performance Standards (MASPS) for the Aeronautical Mobile-Satellite (R) Service (AMS(R)S) as Used in Aeronautical Data Links*, DO-270 (Oct 12, 2001); *Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS)*, RTCA DO-262 (Dec 14, 2000).

**B. The Commission Should Revise Part 87 to Reflect the Expanded Frequencies that are Available for AMS(R)S.**

As the Commission has reaffirmed in recent orders, the Commission “permit[s] AMS(R)S in any MSS band.”<sup>11</sup> This is because “AMSS is an example of MSS” and “AMSS includes AMS(R)S.”<sup>12</sup>

Recognizing this, the Commission should adopt conforming amendments to Part 87 of its rules.<sup>13</sup> Specifically, Sections 87.147(d)(3), 87.173(b), and 87.187(q) should be amended to indicate that aircraft earth stations (“AES”) used for AMS(R)S can transmit signals in the 1610-1626.5 MHz, 1990-2025 MHz, and the 5000-5150 MHz bands.<sup>14</sup> In addition, Section 87.139 should be amended to establish emission limitations for AES operating in the 1610-1626.5 MHz, 1990-2025 MHz and the 5000-5150 MHz bands.

In making these changes, no compelling reason exists for the Commission to amend its Table of Allocations in Section 2.106 to provide intra-network priority and preemptive access for AMS(R)S communications in additional frequency bands. Intra-network priority and preemption can already be ensured through other means, such as

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<sup>11</sup> *The Boeing Company, Concerning Use of the 1990-2025/2165-2200 MHz and Associated Frequency Bands for a Mobile-Satellite System*, DA 01-1631, ¶ 36 (July 17, 2001) (“*Boeing 2 GHz MSS License*”).

<sup>12</sup> *Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, IB Docket No. 99-81, Report and Order, 15 FCC Rcd 16127 (2000) (“*2 GHz MSS Order*”).

<sup>13</sup> See *NPRM*, ¶ 58, n.122 (citing *2 GHz MSS Order*, 15 FCC Rcd at 16155 (noting that the Aviation Radio Service rules “must be amended or waived” to permit operation of AMS(R)S aircraft earth stations in the United States in the 2 GHz Mobile Satellite Service frequency bands)).

<sup>14</sup> In authorizing AMS(R)S transmissions in the 5000-5150 MHz band, the Commission should stress the need for operators to protect microwave landing systems, which operate internationally in the 5000-5250 MHz band. See 47 C.F.R. ¶ 2.106, n.S5.796.

FAA regulations, RTCA standards,<sup>15</sup> International Telecommunications Union (“ITU”) Radio Regulations,<sup>16</sup> or through contractual arrangements. As the Commission recently concluded, a MSS licensee “can enter into contracts with members of the aviation community to provide AMS(R)S in the generic MSS allocation, with appropriate intra-network priority and preemption, without the need for any priority and preemption provision in the U.S. Table of Allocations.”<sup>17</sup>

Furthermore, the Commission does not need to extend to additional frequency bands the *inter-network* priority and preemption rights that are included in Section 87.187(q) for AMS(R)S in the 1549.5-1558.5 and 1651-1660 MHz bands (“upper L-band”). The inter-network priority and preemption rights that exist in the upper L-band are necessary because of the historical coordination difficulties that exist between MSS

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<sup>15</sup> RTCA has in place two documents on equipment specifications and network performance standards for satellite systems providing AMSS and AMS(R)S, which already indicate that an AMS(R)S system must have the technical capability to provide priority and controlling precedence for safety communications. See *Minimum Operational Performance Standards for Aeronautical Mobile Satellite Services (AMSS)*, RTCA/DO-210D Change 2, at 1.5.4 (Nov. 28, 2001); *Guidance on Aeronautical Mobile Satellite Service (AMSS) End-to-End System Performance*, RTCA/DO-215A, § 1.6.5 (Feb. 21, 1995). The requirements include having in place mechanisms to provide preemption of the network’s resources as necessary. The documents create a regulatory obligation that is applicable to any satellite system operator providing AMS(R)S in the bands covered by the MOPS, alleviating the need for a footnote addressing priority and preemption in the U.S. Table of Allocations.

<sup>16</sup> Articles S44 and S45 of the ITU Radio Regulations mandate that a satellite operator carrying aeronautical communications must provide intra-network priorities for AMSS safety and distress communications. In carrying out this requirement, Article S45.4 envisions that a network operator may need to preempt low-priority transmissions to make capacity available for priority communications.

<sup>17</sup> 2 GHz MSS Order, ¶ 64.

networks operated in the band by multiple administrations.<sup>18</sup> In contrast, inter-network priority and preemption rights are not needed in other frequency bands because the Commission's decision to permit AMS(R)S in all generic MSS bands ensures that sufficient spectrum will be available outside the upper L-band for AMS(R)S and inter-network preemption rights are unnecessary.

In amending Part 87, the Commission should not be concerned that it is surrendering regulatory authority over MSS operators providing AMS(R)S. As the Commission has previously concluded, a licensed MSS operator must still apply for a license from the Commission to operate AES.<sup>19</sup> Furthermore, a MSS operator seeking to provide AMS(R)S in the United States must secure the approval of other U.S. government agencies, such as the FAA.<sup>20</sup> Accordingly, ample opportunity will continue to exist for the Commission and other concerned agencies to scrutinize the operational plans of MSS operators and ensure that they meet the safety requirements that are necessary to provide critical communications services to aircraft.

**C. The Commission Should Also Revise Part 87 to Reflect the Use of Improvements in Satellite Communications Technology for the Provision of AMS(R)S.**

In revising Part 87, the Commission should also acknowledge the development of new technologies that can be used to improve the provision of AMS(R)S to the U.S. and

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<sup>18</sup> See *Establishing Rules and Policies for the use of Spectrum for Mobile Satellite Services in the Upper and Lower L-band*, FCC 02-24, ¶¶ 8-9 (Feb. 7, 2002) (noting the historical spectrum coordination difficulties in the upper L-band).

<sup>19</sup> See *Boeing 2 GHz MSS License*, ¶ 39.

<sup>20</sup> See *2 GHz MSS Order*, ¶ 64 n.190; *Boeing 2 GHz MSS License*, ¶ 37.

global aviation industry. For example, the introduction of Code Division Multiple Access (“CDMA”) technologies can enhance AMS(R)S by enabling satellite operators to ensure the provision of priority and preemptive access for emergency and safety related communications usually without physically suspending the communications links for less critical communications.

In order to implement a system of priority and preemption using signal modulation techniques such as Time Division Multiple Access (“TDMA”) or Frequency Division Multiple Access (“FDMA”), low priority transmissions may be physically preempted or suspended in order to give preemptive access to higher priority communications. This is because FDMA and TDMA networks divide bandwidth based on assigned frequencies, the availability of which is inherently limited.

In contrast, a CDMA-based network allocates communications channel capacity based on available signal power, rather than available frequencies. This approach provides advantages for networks that must provide priority and preemptive rights to high priority messages. For example, rather than preempt lower priority signals, in the vast majority of cases a CDMA-based network can permit a high priority communication to operate at greater than normal power levels, thereby providing additional margins to ensure signal reliability. Such an approach ensures that the high priority messages get through, without interrupting lower priority messages.

Even in situations in which a CDMA-based network is operating at maximum aggregate power levels, high priority messages can still be permitted to increase power in order to ensure continual availability and reliability. For the duration of the high priority

message, such power adjustments will usually result solely in a slight increase in the interference for other users and a slight decrease in their bit error rate performance.

While CDMA-based networks provide technical advantages for aeronautical communications, regulatory impediments currently prevent or minimize the potential for their use. For example, in order to enable the use of CDMA for the provision of AMS(R)S, the Commission should amend Section 87.137(a) to include an emission designator for CDMA-based communications above 50 MHz (*e.g.*, 1M5G7W for a 1500 kHz bandwidth). In addition, Section 87.141(j) should be amended to indicate that transmitters employing CDMA may use either BPSK or QPSK modulations for the spreading code.

**D. Finally, the Commission Should Broaden its Part 87 Regulations Beyond the Inmarsat System.**

As noted above, when the Commission created its rules for AMSS and AMS(R)S, it prepared them primarily for aircraft communicating using the Inmarsat satellite system. In fact, many of the Commission's rules are based on Inmarsat's internal SDM.<sup>21</sup> As a result, the Commission's rules include technical restrictions that, while appropriate for Inmarsat, have little or no relevance to satellite networks using different or more advanced technical configurations.

Many of the technical limitations that need to be revised – such as permissible orbital configurations, frequency bands and signal modulations – are addressed in the previous sections of these comments. Other technical restrictions also exist in the Commission's Part 87 rules that should be revised or eliminated. For example, the

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<sup>21</sup> See *AES Order* at 5898.

Commission should amend Section 87.131 (maximum power and emissions), Section 87.133(a)(7) (frequency tolerance), Section 87.137 (bandwidth), Section 87.141(j) (transmission rates), and Section 87.145(d) (Doppler effect compensation).

The Commission should revise these rules in order to make them more flexible for satellite networks using other technical or operational configurations. Alternatively, the Commission could amend many of these rules to indicate that the restrictions that they contain apply solely to AES operating with the Inmarsat system. Such an approach would be consistent with Sections 87.51 and 87.139(i) of the Commission's rules. For example, Section 87.51 establishes additional certification requirements for AES, but the rule applies solely to AES operating with Inmarsat.<sup>22</sup> Additionally, Section 87.139(i) includes emission attenuation requirements for AES, but the restrictions apply only to AES operating in Inmarsat spectrum.

The Commission could use this same approach with other outdated sections of Part 87. Such amendments could ensure that the Commission's original goals of permitting "flexibility of system design and variety in the services offered" continues to exist for satellite networks providing aeronautical communications services.<sup>23</sup>

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<sup>22</sup> Boeing observes that even Inmarsat does not appear to enforce the certification requirements of Section 87.51. Instead, new AES terminals must be tested and then registered with Inmarsat, but Inmarsat is no longer directly involved in the testing process.

<sup>23</sup> *AES Order* at 5896.

### **III. THE COMMISSION SHOULD AMEND ITS RULES TO ACCOMMODATE 8.33 kHz CHANNEL SPACING TRANSMITTERS.**

The Commission proposes to amend its rules to permit certification of dual channel spacing transceivers to accommodate aircraft in international flight involving countries that have implemented a 8.33 kHz channel plan. The Commission's current rules do not provide for operation on 8.33 kHz-spaced channels. As a result radios that can operate in both 8.33 kHz-spaced channels and 25 kHz-spaced channels require a waiver of section 87.173(b) in order to be certified in the United States.

Boeing believes that the Commission should amend its rules to reflect current usage in the aviation industry and avoid the burdensome process on applicants and the Commission of obtaining waivers. As proposed by the Commission, Section 87.137 should be amended to include 8.33 kHz channel spacing in the A3E class. The Commission should also amend Section 87.137 to include additional emission types that reflect the use of different digital modulation/protocol modes. VHF communications using 25 kHz channel spacing in the A3E class, ACARS, and VDL-2 are in regular use worldwide, including in the United States.

VHF communications in the 118-137 MHz band are standardized for international aeronautical use in Annex 10 of the ICAO SARPs. Annex 10 includes not only 25 kHz channels, but also 8.33 kHz channels for voice and other VHF digital modulation /protocol modes. Certification standards, in the form of MOPS, have been published for 25 kHz and 8.33 kHz voice communications<sup>24</sup> and are near completion for VDL-2 and

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<sup>24</sup> See *Minimum Operational Performance Standards for Airborne Radio Communications Equipment Operating within the Radio Frequency Range 117.975-137.000 MHz*, DO-186A Change 1 (Sept. 28, 1998).

VDL-3. In addition, VHF ACARS is an industry standard adopted by AEEC, which uses digital modulation of 25 kHz VHF channels.

Recognizing this, the Commission should add emission designators to Section 87.137 that reflect these international aeronautical industry uses. For example VDL-2 modulation should be an authorized emission type for type-accepted radios without requiring a waiver.<sup>25</sup> The amended rule would assist airframe and avionics manufacturers that are required to deliver aircraft radio systems that support multiple kinds of communication methods to meet the global needs of their aviation customers.

Although the Commission should update its rules to reflect many of the additional emissions types discussed above, Boeing believes that it would be premature for the Commission to include provisions in Part 87 addressing VDL-3 for any purposes other than engineering tests. VDL-3 is still a developmental system in the international aeronautical community. Accordingly, VDL-3 should be permitted only on an experimental basis and a waiver of the rules should still be required.

To effectuate the proposed amendments, the table in section 87.137 should show a 25 kHz authorized bandwidth, with a footnote that states, “In the band 117.975-136 MHz, the authorized bandwidth is 50 kHz for transmitters type accepted before January 1, 1974.” In addition, the following footnotes should also be added to the table:

- 1) In the band 117.975-137 MHz, for transmitters type accepted to tune to 8.33 kHz channel spacing as well as 25 kHz channel spacing, the authorized bandwidth is 8.33 kHz when tuned to an 8.33 kHz channel.

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<sup>25</sup> Inclusion of VDL-2 would require amendments to Sections 87.137 and 87.265 because VDL-2 would be authorized for use by VHF aeronautical en route stations on their authorized frequencies.

2) In the band 117.975-137 MHz, the use of any transmitter in a 8.33 kHz channel spaced mode within the U.S. National Airspace System (“NAS”) is not permitted except by: a) avionics communications equipment manufacturers, and b) Flight Test Stations, which are required to perform installation and checkout of such radio systems prior to delivery to their customers.

3) In the band 117.975-137 MHz, the Commission will not authorize any 8.33 kHz channel spaced transmissions, or the use of their associated emission designator within the U.S. NAS, except by: a) bona-fide international aeronautical carriers (i.e., commercial or civil aircraft authorized to fly international routes) for use outside of the U.S. NAS, and b) avionics communications equipment manufacturers and Flight Test Stations, which are required to perform installation and checkout of such radio systems prior to delivery to their customers.

Section 87.133 should also be amended to reflect the accommodation of 8.33 kHz channel-spacing transmitters.<sup>26</sup> A footnote should be added in the right-hand column in the table of Section 87.133. For aircraft and other mobile stations, the footnote should read “For transmitters type accepted to tune to 8.33 kHz channel spacing as well as to 25 kHz channel spacing, the tolerance is 5 parts per 10<sup>6</sup> when tuned to an 8.33 kHz channel.”

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<sup>26</sup> Several other corrections should be made in Section 87.133. First, the footnotes on item (5) for both aeronautical stations and aircraft stations are incorrect. The references to footnotes 12 and 13 should be to footnote 10, 12 and 10, 13, respectively. The reference to footnote 10 was inadvertently dropped when the new footnotes 12 and 13 were added in the 2001 edition of the Code of Federal Regulations.

One other typographical error appears to exist in Section 87.189(c), which has an erroneous reference to 87.187(p). The reference in Section 87.189(c) should be to Section 87.187(q).

#### **IV. THE COMMISSION SHOULD REMOVE THE UNUSED RADIONAVIGATION ALLOCATION IN THE Ku-BAND.**

As the Commission indicated in its *NPRM*, one of the goals of this proceeding is to “eliminate regulations that are duplicative, outmoded, or otherwise unnecessary.”<sup>27</sup>

One example of such a regulation may be Section 87.187(x), which indicates that the frequency bands 14000-14400, 24250-25250, and 31800-33400 MHz are available for airborne radionavigation devices. Section 87.187(x) reflects somewhat the Commission’s Table of Allocations, which includes an allocation for Radionavigation devices in the 14000-14200 MHz, 24250-24650 MHz, and 31800-33400 MHz bands.<sup>28</sup>

The Commission observed recently that it is “unaware of any Government use of the [14000-14200 MHz] band for radionavigation services in International Telecommunication Union (“ITU”) Region 2, and there is no non-Government use of the band for radionavigation services.”<sup>29</sup> The Commission’s conclusion concurs with Boeing’s research on the issue.

Boeing has contacted officials with the ITU, FAA, ICAO, International Maritime Organization (“IMO”), U.S. Coast Guard, and Canadian Coast Guard for information concerning worldwide use of radionavigation in the 14000-14400 MHz band. Boeing

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<sup>27</sup> *NPRM*, ¶ 2.

<sup>28</sup> It should be noted that Sections 87.187(x) and 2.106 are inconsistent with respect to the allocation for radionavigation in the Ku-band. Section 2.106 indicates that the upper end of the allocation is 14200 MHz, while Section 87.187(x) indicates that the upper end is at 14400 MHz.

<sup>29</sup> *In the Matter of The Boeing Company, Application for Blanket Authority to Operate Up to Eight Hundred Technically Identical Transmit and Receive Mobile Earth Stations Aboard Aircraft in the 14.0-14.5 GHz and 11.7-12.2 GHz Frequency Bands*, DA 01-3008, ¶ 7 (Dec. 23, 2001).

also sought the advice of individuals who are active or play a leadership role in the radionavigation community. All of the experts stated that they were not aware of any radionavigation use in the 14000-14400 MHz band in Region 2. Moreover, discussions with FAA spectrum management personnel indicated that there are no plans to use the 14000-14400 MHz band for aviation services in the future.

In light of the absence of any radionavigation use in the relevant spectrum in Region 2, the Commission should delete the reference to the 14000-14400 MHz band in Section 87.187(x) of the Commission's rules, and remove from the Table of Allocations the allocation for radionavigation devices in the 14000-14200 MHz band.

**V. THE COMMISSION SHOULD RESTRUCTURE ITS EQUIPMENT CERTIFICATION PROCESS ONLY IF IT DOES NOT RESULT IN INCREASED EXPENSE AND DELAY FOR APPLICANTS.**

The Commission proposed to restructure its certification requirements for equipment that is subject to FAA review with respect to its compatibility with the National Airspace System ("NAS").<sup>30</sup> Currently, the Commission considers an application for equipment certification concurrently with FAA review. Specifically, an applicant for certification must provide the FAA with details regarding the application no later than the date of the application's filing with the FCC.<sup>31</sup> The Commission then provides the FAA twenty-one days to raise any questions regarding, or objection to, the application. If no objection is raised, the Commission will act on the application.<sup>32</sup>

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<sup>30</sup> See *NPRM*, ¶ 31.

<sup>31</sup> See 47 C.F.R. § 87.147(d), (d)(1).

<sup>32</sup> See *NPRM*, ¶ 30.

Under the Commission’s proposed new approach, consideration by the FAA and the FCC would take place consecutively, rather than concurrently. Before a FCC application could be filed, the FAA would be required to endorse affirmatively the proposed equipment by issuing a FAA determination of its compatibility with the NAS.<sup>33</sup>

A possibility exists that the Commission’s proposed restructured system could operate more expeditiously than the current system. For this to occur, however, the FAA would have to issue determinations for *every* application submitted regarding the compatibility of equipment with the NAS in less time than the twenty-one days currently allocated for FAA objections. Boeing questions whether such an expectation is reasonable.

Instead, Boeing is concerned that the Commission’s proposed two-step process of consecutive consideration by the FAA and FCC may considerably increase the delay and expense for entities seeking certification for their equipment, as well as the burden on the FAA in preparing and releasing a response on each application. Boeing therefore requests that the Commission address this concern before making any changes to its current equipment certification process.

## **VI. THE COMMISSION SHOULD RESOLVE LICENSING PROBLEMS FOR UNICOM STATIONS WITHOUT THE USE OF AUCTIONS.**

As the Commission acknowledges in its *NPRM*, aeronautical advisory stations, or Unicom, are intended solely for communications involving “the necessities of safe and expeditious operation of aircraft” and provide services that “contribute to the safety of

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<sup>33</sup> See *id.*, ¶ 31.

life, health and property.”<sup>34</sup> Unicom provide an important means for aircraft operators to obtain critical information regarding airport and weather conditions at the vast majority of uncontrolled airport facilities in the country.<sup>35</sup> Recognizing the important role that Unicom play in aviation, common sense would suggest that Unicom must be a public safety radio service, covered under the statutory exemption to the Commission’s auction authority. As discussed below, such a suggestion is also supported by the express language of the Communications Act.

**A. The Communications Act Exempts Unicom Licenses From Competitive Bidding.**

As the Commission acknowledges in its *NPRM*, the Communications Act includes three exceptions to the Commission’s authority to auction licenses for radiocommunications services. One of those exemptions applies to “public safety radio services.”<sup>36</sup>

The Commission raises the possibility in its *NPRM* that Unicom are a public safety radio service, but rejects the idea because “Unicom communicate with stations other than those of the licensee” and therefore the communications are not solely *internal*.<sup>37</sup>

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<sup>34</sup> *NPRM*, ¶¶ 42, 48.

<sup>35</sup> *See id.*, ¶ 43.

<sup>36</sup> 47 U.S.C. § 309(j)(2)(A) (2001).

<sup>37</sup> *NPRM*, ¶ 47.

The statutory exemption for public safety radio services, however, is not limited to “private internal radio services.”<sup>38</sup> Instead, the statute indicates that private internal radio services are *an example* (note the word “including”) of a public safety radio service that is covered by Section 309(j)(2)(A), and should be included in the auction exemption.<sup>39</sup> Furthermore, Congress appears to have deemed its illustration to be an *extreme* example of a service that should be included in the exemption.

The appropriate interpretation of the statutory construction of Section 309(j)(2)(A) possibly can be best explained using a hypothetical statutory provision. Such a fictional provision might indicate that “all convicted felons should be considered for probation, *including* convicted felons that commit very serious offenses.” Obviously, the hypothetical statute should not be interpreted to mean that *only* convicted felons that committed very serious offenses should be considered for probation. Instead, convicted felons that committed less serious offenses should also be considered for probation.

The same interpretation is appropriate for Section 309(j)(2)(A). Congress intended to include under its exemption private radio services that are used for public safety purposes, *despite the fact* that some of the these radio services are limited to internal communications. Private radio services that are used for public safety purposes,

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<sup>38</sup> *Id.*

<sup>39</sup> *See* 47 U.S.C. § 309(j)(2)(A). Indicating that the exemption applies to:

public safety radio services, *including* private internal radio services used by State and local governments and non-government entities and including emergency road services provided by not-for-profit organizations that (i) are used to protect the safety of life, health, or property; and (ii) are not made commercially available to the public.

*Id.* (emphasis added).

but are not limited to internal communications should be deemed to be *even more* eligible for coverage under the auction exemption.

Such an interpretation is consistent with the Commission's prior conclusions regarding Section 309(j)(2)(A). For example, the Commission determined previously that the Section 309(j)(2)(A) auction exemption applied to radio services used for public safety "even if some of the users operate their systems under some type of cost-sharing arrangement or through multiple licensing."<sup>40</sup> Such arrangements often involve communications that are not *internal* to the licensee.

This more liberal interpretation also corresponds with real life situations. Many police and fire departments maintain mutual aid agreements that permit certain outside entities to utilize some of their licensed public safety radio frequencies to provide communications for assistance and "first responder" purposes. For example, Boeing maintains its own private fire and emergency services at its major facilities. Boeing's emergency teams are often authorized to communicate with city and county emergency personnel on some of their licensed public safety frequencies in order to provide assistance and first responder services. In other words, if the Commission were to limit the auction exemption to only those public safety communications services that are strictly limited to internal communications, all of the nation's augmented fire and emergency services would be excluded.

Likewise, such a restrictive interpretation would be both inappropriate for Unicom stations and, as a statutory matter, incorrect. Congress clearly intended for

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<sup>40</sup> See *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended*, 15 FCC Rcd 22709, 22715-17 (2000), *petitions for reconsideration pending*.

public safety services such as Unicom licenses to be included under the exemption to the Commission's auction authority. Accordingly, the Commission should conclude that it does not have the authority to auction Unicom licenses.

**B. The Commission Should Take Additional Steps to Avoid Mutual Exclusivity Between Unicom Applicants.**

As the Commission observes in the *NPRM*, the Commission should adopt measures that avoid mutually exclusivity when processing Unicom applications. In developing these measures, the Commission should reflect on the underlying purpose of Unicom systems. Unicoms are intended primarily for safety related information, and only secondarily to transmit other information, such as available ground transportation, food and lodging.<sup>41</sup> Unicoms must also provide impartial information regarding available ground services, rather than favoring any services made available by the licensee.<sup>42</sup>

Recognizing these principles, the resolution of mutually exclusive situations should be reasonably easy. First, the Commission indicated that in most situations involving competing applicants, one of the applicants is a governmental entity.<sup>43</sup> The Commission should establish a strong presumption that, in light of the public safety purpose of Unicom licenses, whenever a governmental or quasi-governmental entity is an applicant for a Unicom license, and is willing to operate the station whenever the airport facility is open, the governmental or quasi-governmental entity should receive the license, and competing applications should be dismissed.

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<sup>41</sup> See *NPRM*, ¶ 42.

<sup>42</sup> See *id.*

<sup>43</sup> See *id.*, ¶ 48.

Second, when none of the applicants is a governmental or quasi-governmental entity, priority should be given to the owner of the airport in question. Third, if none of the above conditions apply, but multiple competing applications are still pending for a Unicom license covering a particular airport, the Commission should direct the applicants to develop (on their own and without involvement from the Commission) some sort of sharing mechanism that permits the applicants to operate the Unicom jointly.<sup>44</sup> Such an approach would resolve mutually exclusive situations and would also ensure that one of the fundamental precepts for Unicom operations – that they are used to provide impartial information – is maintained.<sup>45</sup>

## **VI. CONCLUSION**

As indicated herein, the Commission should update its rules for the Aviation Radio Service to reflect recent technological advances and to ensure that its Part 87 rules are consistent with the Commission's other regulations. Such changes are necessary to

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<sup>44</sup> For example, the Commission authorizes “multiple-licensed” systems under Part 90 of its rules, which permit two or more entities to be licensed for the same land station, provided that each licensee complies with the Commission's rules regarding permissible communications and each licensee is eligible for the frequencies of which the land station operates. *See* 47 C.F.R. § 90.185 (2001).

<sup>45</sup> Finally, while Boeing strongly supports an expectancy of renewal for all FCC licensees, Boeing believes that an expectancy may not always be the best approach with respect to Unicom licenses. Instead, the Commission should process competing Unicom applications using the principles discussed above, even if one of the applicants is an incumbent licensee.

ensure that the Commission's Part 87 rules continue to provide instructive and beneficial regulatory guidance in the provision of aeronautical communication and navigation services.

Respectfully submitted,

**THE BOEING COMPANY**

By: /s/ David A. Nall

Sheldon R. Bentley  
Senior Manager  
Spectrum Management and Radio Services  
Shared Services Group  
The Boeing Company  
P.O. Box 3707, MC 3U-AJ  
Seattle, WA 98124-2207  
(253) 657-6713

David A. Nall  
Bruce A. Olcott  
Aspa Paroutsas  
Squire, Sanders & Dempsey L.L.P.  
1201 Pennsylvania Avenue, N.W.  
P.O. Box 407  
Washington, D.C. 20044-0407  
(202) 626-6600

Its Attorneys

March 14, 2002