

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

In the Matter of)	
)	
Amendment of Parts 2, 25, and 87 of the)	
Commission's Rules to Implement Decisions)	
from World Radiocommunication)	ET Docket No. 02-305
Conferences Concerning Frequency Bands)	
Between 28 MHz and 36 GHz and to)	
Otherwise Update the Rules in this Frequency)	
Range)	
)	
Amendment of Parts 2 and 25 of the)	RM-10331
Commission's Rules to Allocate Spectrum For)	
Government and Non-Government Use in the)	
Radionavigation-Satellite Service)	

To: The Commission

COMMENTS

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COMMENTS

AirTV Limited (“AirTV”) submits these Comments in response to the Commission’s Notice of Proposed Rule Making in the above-captioned proceeding.¹ AirTV is an interested party in this proceeding because it has developed and plans to implement a unique, satellite-based Direct-to-Aircraft (“DTA”) entertainment and connectivity system utilizing a radiocommunication service in a frequency band that is proposed to be removed by this proceeding. Specifically, AirTV opposes the Commission’s proposal to remove from its rules the current Broadcast Satellite Service (“BSS”) S-band allocated in the United States and which has a worldwide allocation

¹ *Notice of Proposed Rule Making* in ET Docket No. 02-305, 67 Fed. Reg. 75,968 (Dec. 10, 2002) (“NPRM”).

under ITU treaty, because such action would prevent the provision of AirTV's services in the United States. In addition, AirTV asks the Commission to remove Footnote NG101 of the Allocations Table to allow a broader range of programming to commercial airline passengers.² It is essential that the Commission support AirTV's intention to serve the public interest through development and implementation of its unique global DTA system in the United States. In short, the Commission must not change the current BSS allocation in the S-band, but it should proceed with its proposal to remove the current NG101 programming limitation.

I. INTRODUCTION

AirTV has developed a unique DTA entertainment and connectivity system for the global commercial airline market, and it has firm plans to implement its system in 2005. It will provide an array of services to the global commercial airline market, which consists of some 1.5 billion passengers annually who fly on long-haul flights of 4 hours or longer, with a unique combination of live video programming, email and broadband Internet services.

The AirTV services will be delivered through an initial constellation of four AirTV-owned geostationary ("GSO") satellites to provide seamless global coverage. These GSO satellites will operate in a one-way, broadcast-only mode, using the 18.1-18.4 GHz BSS feeder link band for uplink channels in a few locations and the 2535-2655 MHz portion of the 2520-2670 MHz BSS S-band allocation for provision of global downlink services to commercial aircraft.

² 47 CFR § 1.102, NG101.

The AirTV network will operate in conjunction with the Inmarsat system to provide two-way data services. Data requests will be transmitted from the aircraft via existing onboard Inmarsat systems, and data will be transmitted from the AirTV GSO satellites direct to the aircraft.

A. Background

In 1996, AirTV embarked on an extensive evaluation to determine the most suitable spectrum for its DTA services. It concluded that the BSS S-band, 2520-2670 MHz, with its global allocation, available bandwidth, general regulatory features and limited utilization, was optimal for AirTV's needs. Indeed, the S-band's primary allocation in all three ITU regions would support the use of the same equipment on a global basis, reducing costs and allowing optimal system performance.

AirTV was able to design its system to operate within the Power Flux Density ("PFD") limit mask specified in Table 21.4 of the ITU Radio Regulations, assuring compatibility with co-primary terrestrial services. In addition, the relatively light use of the spectrum for BSS services enhances the probability that intersystem coordination issues can be resolved easily, if they occur at all.

II. THE COMMISSION MUST NOT CHANGE THE CURRENT BSS S-BAND ALLOCATION

In its NPRM, the Commission proposes to remove the BSS S-band frequency allocation in the United States. However, AirTV has already filed Advance Publication and Request for Coordination information for global use of the BSS S-band spectrum with the ITU and has complied with all the requirements pertaining to the sharing and protection of terrestrial services. Indeed, as the Commission itself has recognized, most of the referenced AirTV filings have been processed through the

Administration of Canada.³ AirTV therefore opposes any proposal that would now constrain its ability to provide a contiguous global service and ability to function within the United States. In addition, AirTV believes that the Commission's proposal is both anti-competitive and counter to the spirit of the World Trade Organization ("WTO") policies that favor international market access, because the proposed change would adversely impact AirTV, a non-U.S. entity.⁴

A. AirTV Has Already Committed to Building Its Satellite System and Has Coordinated It With the United States

AirTV filed its request for nine orbital locations, using BSS S-band frequencies, through the Administration of Canada and Brunei Darussalam in 1997.⁵ In 2000, AirTV signed a satellite construction contract with Alcatel Space as well as a launch-vehicle contract with Arianespace. Both of these organizations have agreed to make a significant financial investment in AirTV. AirTV is moving diligently toward the creation of its visionary satellite network and has committed enormous resources toward that end.

Since 1997, AirTV has been working through the Administrations of Canada and Brunei Darussalam and the ITU to coordinate its orbital slots. AirTV has completed coordination with numerous administrations, and is currently finalizing all

³ NPRM at para. 50, n.72.

⁴ See discussion, *infra* at 10.

⁵ The AirTV GSO satellites authorized through Canada will be located at orbital locations 86° West Longitude, 96° West Longitude, 55° West Longitude, 12° West Longitude, 13.5° West Longitude, 170° East Longitude and 180° East Longitude. Two additional satellites, authorized through Brunei Darussalam, will operate at 64° East Longitude and 96° East Longitude. The initial implementation will deploy satellites at four of the nine orbital locations.

remaining coordinations. The 2535-2655 MHz S-band frequencies have been essentially coordinated with the U.S. Administration, and any remaining matters are expected to be resolved quickly.

In addition, there have been a number of correspondence exchanges between the AirTV-filing Administrations and the Commission with respect to the emergency TT&C and 18.1-18.4 GHz feeder link bands, resolving a variety of coordination questions. Any remaining coordination matters are expected to be similarly resolved because they address essentially the same issues.

B. AirTV's System Will Not Cause Unacceptable Interference to Terrestrial Services in the S-Band

The Commission states in the NPRM that “BSS operation in the band 2500-2690 MHz could affect the reliability of point to point multichannel and low-power consumer response channels.”⁶ The Commission further states that “[w]e propose to delete the BSS allocation from the band 2500-2690 MHz to remove the regulatory uncertainty from the spectrum.”⁷ As this section shows, there is no adverse impact on the reliability of terrestrial services by operation of AirTV's satellite system. Moreover, there is no regulatory uncertainty regarding the need to retain the current BSS allocation in the 2500-2690 MHz band because that allocation of spectrum is absolutely necessary for provision of the global services planned by AirTV.

AirTV has been successful throughout its long coordination process because its system was designed to comply with all ITU rules and regulations. Indeed,

⁶ NPRM at para. 52.

⁷ *Id.*

the entire AirTV network has been carefully designed to operate in an environment of operational terrestrial services while correspondingly operating in a responsible manner that is well within the ITU-mandated PFD requirements. Such operation ensures that present and future terrestrial services will be protected against unacceptable interference.

The following table shows the EIRP/PFD levels of the LARKSAT NA satellite relative to the EIRP/PFD levels allowed by the PFD limit mask specified in Table 21.4 of the ITU Rules and Regulations.⁸ LARKSAT NA (86° West Longitude) will provide coverage of CONUS and, as can be seen in the table below, the EIRP figures are typically 10 dB below allowable PFD levels in this band.

⁸ The LARKSAT network will feature service links in the frequency band 2535-2655 MHz (space-to-Earth) and will use the frequency band 18.1-18.4 GHz (Earth-to-space) for feederlinks. These bands will also be used for on-station TT&C. These space stations' transmissions meet (as will AirTV's transmissions) the PFD limits specified in ITU Table 21.4 for the frequency band 2500-2690 MHz. The frequency bands 2025-2110 MHz and 2200-2290 MHz will be used for narrowband, emergency telecommand and telemetry purposes.

Elevation Angle (degrees)	PFD Limit/ 4 kHz dBW/m ²	Limit EIRP/ 27 MHz dBW	LARKSAT-NA EIRP/27 MHz dBW	LARKSAT-NA PFD in 4 kHz dBW/m ²
5.0	-152.0	49.6		
7.5	-150.1	51.4		
10.0	-148.3	53.2		
15.0	-144.5	56.9		
20.0	-140.8	60.5	50.4	-150.9
30.0	-137.0	64.0	53.3	-147.7
40.0	-137.0	63.9	55.8	-145.1
50.0	-137.0	63.7	54.2	-146.5
60.0	-137.0	63.6		
70.0	-137.0	63.5		

Extensive studies have been performed to evaluate the potential impact on both terrestrial wireless and fixed services from satellites radiating at the PFD limits contained in ITU Table 21.4. The results of these studies show that satellites radiating at the allowable PFD limits of ITU Table 21.4 produce no unacceptable level of interference to terrestrial services. The impact of AirTV's transmissions at 10 dB below allowable levels, therefore, is negligible. AirTV also has demonstrated through favorable findings of the ITU-R that it can operate its services over the United States without unacceptable interference to any current or planned terrestrial service. AirTV therefore categorically rejects any argument that it cannot readily share spectrum with terrestrial services and strongly opposes any change that would adversely impact implementation of its proposed satellite system. Accordingly, AirTV respectfully requests that the Commission retain the current BSS allocation for the S-band frequencies 2520-2670 MHz.

C. The Commission Should Remove Footnote NG101

The Commission, in conjunction with its other proposals in this proceeding, proposes to remove the limitation of Footnote NG101.⁹ This footnote restricts the use of BSS in the S-band to educational television programming, reflecting the marketplace at a time when the Internet was not yet ubiquitous and broadband data services were at best nascent. Evolving technologies and increasing demand for data capacity mean using spectrum in ways that are more efficient and flexible. The need for a regulatory environment that allows a broader panoply of service offerings in the BSS S-band has also become clear, and the Commission has responded accordingly.¹⁰ It is therefore appropriate that the Commission now remove Footnote NG101, which will bring the allocation of spectrum in this section into the 21st century.

III. THE PUBLIC INTEREST REQUIRES THAT THE COMMISSION NOT REMOVE THE BSS ALLOCATION IN THE S-BAND

AirTV plans to provide a global service that is viewed to be highly desirable by the airlines and their passengers. It will provide an extensive variety of live video entertainment and broadband services, including email delivery and Internet access. The AirTV system will also be used to provide vital safety communications and real-time

⁹ See note 7, *supra*.

¹⁰ The Commission already has recognized this change in the market, authorizing MDS and ITFS operators to provide two-way Internet access. See, e.g., *In the Matter of Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licenses to Engage in Fixed Two Way Transmissions*, MM Docket 97-217, Report and Order, 13 FCC Rcd 9112 (1998); see also, *In the Matter of Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licenses to Engage in Fixed Two Way Transmissions*, MM Docket 97-217, Report and Order on Further Reconsideration and Further Notice of Proposed Rulemaking, 65 Fed. Reg. 46,612 (Jul. 31, 2000).

operational information (weather maps, flight chart updates, etc.) to aircraft. With the current emphasis on airline security, this service is viewed as extremely important by the airlines. The frequency band 2520-2670 MHz is the only worldwide allocation for BSS within which a global system for transmission to aircraft can be accommodated.

AirTV has signed agreements with Alitalia and Saudi Arabian Airlines to perform flight tests on a low data rate email service that will become AirTV's initial service offering. This service will be delivered through the Inmarsat system and migrated to the high-speed AirTV services when its satellites are operational. The Alitalia trials were successfully completed in December 2002 and AirTV is currently in commercial discussions with Alitalia for long-term service.¹¹ The trials with Saudi Arabian Airlines are planned for the spring of this year. AirTV is also in discussions with several other major airlines and anticipates making further announcements this spring.

AirTV has received strong backing from airline industry leaders. For example, Airbus Industries, after evaluating the AirTV system, has endorsed AirTV as its preferred supplier for in-flight television as well as its broadband supplier for its Airbus In-flight Information Services system. Also, AirTV has entered into a joint marketing arrangement with Rockwell Collins, of Cedar Rapids, Iowa, and has been designated as the preferred broadband supplier of Tenzing Communications, of Seattle, Washington.

There is currently no satellite system or other infrastructure that can provide the capacity and coverage required to deliver the services planned by AirTV. As described, AirTV has designed a unique network of GSO satellites that will enable it to

¹¹ There have been reports of Alitalia validation of the AirTV concept. *See, e.g., Satellite Today*, Feb. 5, 2003, Vol. 2 Issue 18; *Talk Satellite*, Feb. 5, 2003; *WAEA Industry Newsletter*, January 2003.

offer its services on a global basis. Other entities have proposed data services to aircraft through lease of capacity on existing or future satellites, but these systems are not global in coverage. One such system has begun testing provision of television service to aircraft in a limited portion of the United States using existing domestic broadcast satellite facilities. Only AirTV will have a global network capable of providing data and entertainment services to commercial aircraft anywhere and anytime.

If the Commission's proposal to eliminate the BSS allocation from the S-band were adopted, AirTV would be able to provide service everywhere in the world except the United States. Even one U.S. company providing less than global service but through leased facilities would be given a distinct competitive advantage over AirTV and a *de facto* monopoly within the United States. Further, many airlines would be faced with limited or no choice when deciding on a broadband service provider for in-flight passenger entertainment or for vital safety and operational services. AirTV believes that the Commission's proposal will create a protectionist and anti-competitive market for AirTV's commercial airline services, counter to the WTO protocol that encourages international competition.¹² This was surely not the intent of the Commission when it

¹² See, e.g., WTO Web Page, *About the WTO* www.wto.org/wto/inbrief/infr00.htm ("WTO Web Page"). WTO members are bound to the obligations defined in the General Agreement on Trade in Services ("GATS"). GATS operates on three levels: the main text containing general principles; annexes establishing rules for specific sectors; and individual countries' specific market access commitments. WTO Web Page, *General Agreement on Trade in Services* <<http://www.wto.org/wto/services/services.htm>> See also http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_highlights_commit_exempt_e.htm#country (The United States "commits to open markets for essentially all basic telecom services . . . for all market segments . . ."). Exempted are DTH, DBS and DARS. AirTV's services are not in these bands. See also, *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Satellites Providing Domestic and International Service in the United States*, Report and Order, IB Docket No. 96-111, 12 FCC Rcd 24094, 21012 (1997) (providing opportunities for non-U.S.-licensed satellites to deliver services in the United States would bring U.S. consumers the benefits of enhanced competition).

considered its proposal to remove the BSS S-band allocation in this proceeding.

Accordingly, AirTV respectfully requests that the BSS allocation in the frequency band 2520-2670 MHz be retained.

IV. CONCLUSION

In view of the foregoing, AirTV urges the Commission to abandon its proposal to remove the BSS allocation in the S-band, and to remove NG101 entirely.

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