

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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In the Matter of)	
)	
Amendment of Part 22 of the Commission's Rules)	WT Docket No. 03-103
To Benefit the Consumers of Air-Ground)	
Telecommunications Services)	
)	
Biennial Regulatory Review - Amendment of)	
Parts 1, 22, and 90 of the Commission's Rules)	
)	
Application of Verizon Airfone Inc. for Renewal)	File No. 0001716212
of 800 MHz Air-Ground Radiotelephone License,)	
Call Sign KNKG804)	
_____)	

PETITION FOR CLARIFICATION AND RECONSIDERATION

Space Data Corporation (“Space Data”), pursuant to Section 1.429 of the Commission’s rules,¹ seeks clarification and reconsideration of certain aspects of the Commission’s February 22, 2005 Report and Order that adopted new service rules for the four MHz of dedicated spectrum in the 800 MHz band for commercial air-to-ground (“ATG”) licenses (the “*ATG Order*”).² Specifically, Space Data requests that the Commission: (1) confirm that the new service rules encompass the use of balloon-borne stratospheric platforms (and similar technologies) to provide ATG services, and (2) reconsider its decision to prohibit an ATG licensee from providing ancillary terrestrial services in the ATG band on a secondary basis.

¹ 47 C.F.R. § 1.429.

² *Amendment of Part 22 of the Commission’s Rules to Benefit the Consumers of Air-Ground Telecommunications Services*, Report and Order and Notice of Proposed Rulemaking, WT Docket Nos. 03-103, 05-42, File No. 0001716212 (rel. Feb. 22, 2005) (“*ATG Order*”). The *ATG Order* was published in the Federal Register on April 13, 2005. 70 Fed. Reg. 19293 (Apr. 13, 2005).

Grant of these requests would serve the public interest by ensuring that the ATG service rules are technologically-neutral by allowing the use of innovative new technologies and providing needed wireless services to rural and underserved markets.

I. THE COMMISSION SHOULD CLARIFY THAT OPERATORS MAY USE BALLOON-BORNE STRATOSPHERIC PLATFORMS TO PROVIDE COMMERCIAL ATG SERVICES.

In the *ATG Order* the Commission revised its rules and adopted “a flexible regulatory framework that will enable licensees to provide air-ground communications services using *any existing or future technology* that can fit within their assigned spectrum block.”³ Space Data interprets this broad definition of ATG technology to encompass the balloon-borne stratospheric platforms used in its operations. As adopted, however, the *ATG Order* does not endorse or specifically recognize the use of stratospheric platforms in the ATG band. Rather, the focus of the Commission’s analysis in the *ATG Order* is on terrestrial-based networks.

For example, the safe harbors that would satisfy the Commission’s “substantial service” construction requirement for ATG licenses larger than 1 MHz are based either on: (1) constructing and operating a certain number of “base” or “ground” stations, or (2) constructing and operating sufficient “base stations” to serve a certain number of airports.⁴ Similarly, operators with overlapping 3 MHz ATG licenses are required to coordinate “ground station” locations and file a spectrum sharing and site location plan with the Commission.⁵ Further, the

³ *ATG Order* ¶ 2 (emphasis added); *see also* 47 C.F.R. § 22.861 (“Commercial aviation air-ground systems may use any type of emission or technology that complies with the technical rules in this subpart.”).

⁴ *ATG Order* ¶ 84; 47 C.F.R. § 22.873(b)(2). Although the new Section 22.873 states that the second safe harbor is the “provision of service to the airspace of 25 of the 50 busiest airports,” the *ATG Order* also states that the safe harbor is met through the use of “base stations.”

⁵ *ATG Order* ¶ 34.

technical standards for operating in the ATG band limit the transmit power of “ground stations” and “airborne mobile stations.”⁶

As Space Data previously explained in this proceeding,⁷ it has developed an innovative network composed of inexpensive weather balloons to carrier miniature radio repeaters (SkySites[®]) to an altitude of approximately 100,000 feet, which is two to three times higher than commercial aircraft. Space Data’s stratospheric network covers very large geographic areas with broad antenna beams with which Space Data (or other operator using similar technology) could use to provide commercial ATG services. Space Data’s network does not utilize traditional “base” or “ground” stations, but rather it is a constellation of floating stations. The Commission previously recognized that the unique nature of Space Data’s system does not conform to conventional terrestrial networks and granted it a waiver to operate on narrowband PCS spectrum.⁸ The Commission concluded that Space Data’s SkySites[®] did not fall within the definition of “base stations” as the term is used in the narrowband PCS rules, but that Space Data “demonstrated unique and special circumstances that justify applying the base station rules to its repeaters.”⁹

⁶ *Id.* ¶ 58.

⁷ *See, e.g.*, Reply Comments of Space Data Corporation, WT Docket No. 03-103 (Oct. 23, 2003) (“Space Data Reply Comments”); Space Data Corporation: Air-to-Ground Analysis, attached to Letter from Cheryl A. Tritt, counsel to Space Data Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 03-103 (Sept. 9, 2004) (“Space Data ATG Analysis”).

⁸ *Petition for a Declaratory Ruling, a Clarification or, in the Alternative, a Waiver of Certain Narrowband Personal Communications Services (PSC) Rules as the Apply to a High-Altitude Balloon-Based Communications System*, 16 FCC Rcd 16421 (WTB 2001) (“*Space Data Waiver Order*”). The Commission also granted Space Data’s construction showing for a nationwide narrowband PCS that was based upon its balloon-borne stratospheric network. *See* ULS File No. 0001900882.

⁹ *Space Data Waiver Order*, 16 FCC Rcd at 16423.

Space Data requests that the Commission clarify three provisions in the *ATG Order*. First, the Commission should acknowledge that Space Data's balloon-borne network (or similar networks utilizing stratospheric technology that may be operated by other carriers) qualifies to provide ATG services. In addition, the Commission should note that the effective radiated power limits under Section 22.867 of the rules for airborne mobile station transmitters should apply to stratospheric platforms.¹⁰ The Commission also should modify the definitions section of the ATG rules to reflect the potential use of balloon-borne stratospheric platforms. For example, Section 22.99 of the rules defines "airborne station" as a "mobile station... authorized for use on aircraft," a "mobile station" as a transmitter that is "capable of operation while in motion," and "ground station" as a "stationary transmitter that provides service to airborne mobile stations."¹¹ Read together, they contemplate a stationary terrestrial transmitter communicating with a handset or similar equipment located in an aircraft that may be in motion. The Commission should amend the definitions to acknowledge that transmitters in a stratospheric network are not stationary, but are mobile and operate outside of an aircraft.

II. THE COMMISSION SHOULD ALLOW ATG OPERATORS TO PROVIDE TERRESTRIAL SERVICES ON A SECONDARY BASIS.

The Commission should reconsider its decision to prohibit ATG licensees from providing ancillary terrestrial services.¹² Space Data agrees with the Commission and other participants in this proceeding that ATG licenses should be used predominantly for ATG services.¹³ The

¹⁰ 47 C.F.R. § 22.867 (providing that the peak effective radiated power of airborne mobile station transmitters must not exceed 12 watts).

¹¹ *Id.* § 22.99.

¹² *ATG Order* ¶ 53.

¹³ *Id.*

Commission, however, has a unique opportunity to allow an ATG licensee to provide terrestrial wireless services to rural and underserved areas on a secondary basis. Secondary use would not hamper or preclude the provision of ATG services, but would serve the public interest by also affording rural Americans access to affordable wireless services otherwise unavailable to them.

As Space Data previously noted in this proceeding,¹⁴ the likelihood that wireless service will become widely available in rural and underserved areas is small because traditional wireless carriers have determined that ubiquitous deployment of terrestrial infrastructure in those areas is not cost effective given the sparse population. Nonetheless, access to wireless services in these areas is particularly important for residents who often live and work in isolated locations and routinely must drive long distances through vast areas that do not have sufficient wireless coverage and also lack accessible wireline telephones.

Wireless access is particularly important in rural areas for public safety and the need will be more acute after the sunset of Analog Mobile Phone Systems now scheduled for February 2008.¹⁵ As OnStar previously noted, “[a]lthough deaths from vehicle crashes have stabilized in recent years, deaths at the crash scene prior to the arrival of emergency care providers have doubled in the last 20 years and now exceed 20,000 per year.... Many of these fatalities are in rural areas, where 20 percent of the nation’s total annual crashes and 60 percent of the fatalities occur.”¹⁶ The reduction of analog systems in rural areas will exacerbate the lack of wireless services because even the most widely deployed digital mobile technology has no coverage

¹⁴ Space Data Reply Comments at 14-17.

¹⁵ *Year 2000 Biennial Regulatory Review – Amendment of Part 22 of the Commission’s Rules to Modify or Eliminate Outdated Rules Affecting the Cellular Radiotelephone Service or other Commercial Mobile Radio Services*, 17 FCC Rcd 18401 (2002).

¹⁶ *See* Comments of OnStar Corporation, WT Docket No. 01-108 (Aug. 1, 2002).

whatsoever in nearly 30 percent of the nation's landmass.¹⁷ Similarly, public safety personnel in rural areas require quality wireless services to perform their duties. Thus, allowing an ATG licensee to provide wireless services in rural and underserved areas on a secondary basis serves the public interest by providing a valuable public safety resource.

Stratospheric technology, like that employed by Space Data, is perfectly suited to deliver wireless services on a secondary basis to rural and underserved areas. The wide coverage area of a balloon-borne stratospheric network could provide needed wireless services over a significant amount of territory, but, unlike terrestrial networks, with low deployment costs.¹⁸ Furthermore, handsets operating on adjacent bands to the ATG frequencies (cellular and SMR) could be easily modified to operate on the ATG frequencies and programmed to use ATG frequencies when on the ground as a last resort if the handset is unable to receive any adequate signal from terrestrial networks. Placing these limits on the cellular handsets would ensure that the ATG operator's frequencies are used for terrestrial services only in areas of the United States that have little or no wireless coverage. Given the sparse population in these areas, the amount of terrestrial traffic would be light and unlikely to interfere with ATG traffic.

Providing terrestrial wireless service on a secondary basis using ATG spectrum is consistent with prior Commission decisions to promote spectrum efficiency and service to rural

¹⁷ See *Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, 19 FCC Rcd 20597, Table 7 (2004). The landmass that is not covered by digital wireless technology is likely much greater because the Commission's study assumes that any cellular market area ("CMA") or county that has some level of coverage has service available over the entire CMA or county. Thus, the study exaggerates the true geographic coverage of each listed wireless technology.

¹⁸ See Space Data ATG Analysis at 22. It is unlikely that allowing secondary terrestrial use would encourage terrestrial carriers to use the ATG spectrum for terrestrial, rather than ATG services, because terrestrial carriers still would face extremely high deployment costs. Thus, such terrestrial use would be best suited for ATG operators, such as Space Data, that utilize a stratospheric network.

and underserved areas. For example, the Commission authorized such ancillary services by mobile satellite service (“MSS”) providers because MSS systems can provide wireless services in areas that are difficult or impossible to serve with terrestrial base stations, such as remote and rural areas.¹⁹ The Commission concluded in the case of MSS providers that ancillary terrestrial service “would enhance the ability of the national and global telecommunications systems to protect the public by offering ubiquitous service to law enforcement, public aid agencies, and the public.”²⁰

Secondary use of an ATG license to provide terrestrial wireless service must ensure that such operations do not create harmful interference to other wireless licensees. Any technical issues that may be triggered by secondary terrestrial use (to the extent there are any) could be resolved with proper coordination between the ATG licensee and the adjacent band licensees. The Commission acknowledged in the *ATG Order* that concerns regarding potential adjacent band interference could be addressed.²¹

Furthermore, as Space Data previously stated in this proceeding, signals from stratospheric platforms are unlikely to cause interference to adjacent band licensees because there is no near-far interference with a stratospheric system as all the users and terrestrial base stations are “far” from a stratospheric transmitter. Thus, signal levels on the ground from a stratospheric transmitter are all well attenuated by the free space loss between the ground and the

¹⁹ See *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 1962, 1978, 1989 (2003) (“*First MSS Order*”); *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Memorandum Opinion and Order and Second Order on Reconsideration, IB Docket No. 01-185, FCC 05-30, ¶ 7 (2005) (“*Second MSS Order*”)

²⁰ *Second MSS Order* ¶ 9 (citing to *First MSS Order*, 18 FCC Rcd at 1978).

²¹ *ATG Order* ¶ 53.

transmitter. Additionally, power limitations require stratospheric platform antennas to be designed to provide a uniform signal power level throughout a coverage footprint. This signal power level is just adequate for closing the communications link with penetration and fading losses, but not so high as to cause interference that would result from a signal near a tower. If the ancillary use is restricted to areas where terrestrial signals in the adjacent bands are unavailable, by definition, terrestrial handsets operating ATG frequencies will not interfere with equipment operating on adjacent terrestrial bands.²²

III. CONCLUSION.

Space Data strongly urges the Commission to confirm that its new ATG rules encompass the use of balloon-borne stratospheric platforms to provide ATG services and find that an ATG licensee can provide terrestrial services in the ATG band on a secondary basis.

Respectfully submitted,

Gerald M. Knoblach
Chairman and CEO
Space Data Corporation
460 South Benson Lane
Chandler, AZ 85226
(480) 403-0020

/s/ Cheryl A. Tritt
Cheryl A. Tritt
Jennifer L. Kostyu
Morrison & Foerster LLP
2000 Pennsylvania Ave., NW
Suite 5500
Washington, D.C. 20006
(202) 887-1500

Counsel to Space Data Corporation

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²² ATG licensees using terrestrial ground stations also could be limited to operating only in areas where there is no coverage from services in adjacent bands. From a practical standpoint, however, similar to adjacent band operators, it is unlikely that terrestrial-based ATG operators would build out using ATG frequencies if there is insufficient market potential to support construction of a traditional terrestrial network.