BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use of the	)	GN Docket No. 18-122
3.7 GHz to 4.2 GHz Band	)	
	)	

To: The Commission

COMMENTS OF UNITED PARCEL SERVICE, INC.

Pursuant to Sections 1.415 and 1.419 of the Federal Communications Commission ("FCC" or "Commission") Rules,[1] United Parcel Service, Inc. ("UPS") hereby submits these Comments in response to the Commission's May 1, 2018, Public Notice ("PN" or "Notice") in the above-captioned proceeding.[2] As detailed below, UPS's airline operations rely on critical systems operating in the 3.7 to 4.2 GHz band and the adjacent 4.2 to 4.4 GHz band. While considering the feasibility of allowing

[1] 47 CFR §§ 1.415, 1.419.

[2] Office of Engineering and Technology, International, and Wireless Telecommunications Bureaus Seek Comment for Report on the Feasibility of Allowing Commercial Wireless Services, Licensed or Unlicensed, to Use or Share Use of the Frequencies Between 3.7-4.2 GHz, GN Docket No. 18-122, Public Notice, DA 18-446, released May 1, 2018.

commercial wireless services at 3.7-4.2 GHz, UPS urges the Commission to ensure that these systems are not unduly impacted.

INTRODUCTION

UPS is a global leader in logistics, offering a broad range of solutions including the transportation of packages and freight; the facilitation of international trade; and the deployment of advanced technologies to manage more efficiently the world of business. Headquartered in Atlanta, UPS has more than 454,000 employees (approximately 374,000 being in the U.S.) and serves more than 220 countries and territories worldwide.

UPS delivers 20 million packages and documents daily, carrying approximately six percent of the U.S. gross domestic product and two percent of global GDP in its trucks and planes to every corner of the globe, every day. This rapid, efficient, and reliable air cargo and express service is a critical element of the international infrastructure of commerce, and the nation's economic strength. To provide this level of service, UPS operates 244 modern jet aircraft in support of mission-critical business communications and applications.

I. INCUMBENT SATELLITE SYSTEMS PROVIDING AVIATION WEATHER DATA IN THE 3.7-4.2 GHZ BAND MUST BE PROTECTED

UPS relies on a C-band satellite system operating in the 3.7-4.2 GHz band as a key backhaul capability for aviation weather data requiring high reliability. Immediate access to the weather data provided through this system is critical for maximizing the safety and efficiency of UPS airline operations. Unlike higher

frequency satellite communications, the C-band system used is not subject to rain fade, and continuously operates through almost all weather conditions. This attribute is a key factor in assuring availability and reliability.

There are no alternative satellite systems providing the same capability and reliability as the existing C-band satellite system. As the Commission considers allowing new commercial wireless services in the 3.7-4.2 GHz band, this incumbent use must be protected.

II. SAFETY-CRITICAL RADIO ALTIMETER SYSTEMS IN THE ADJACENT 4.2-4.4 GHZ BAND MUST BE PROTECTED

The 4.2-4.4 GHz aeronautical radionavigation service ("ARNS") allocation has been used globally by airborne radio altimeters for over 40 years to improve safety. Pilots rely on the radio altimeter ("RA") for accurate altitude information during landing in all weather conditions. The RA is also a key system providing input to the Ground Proximity Warning System ("GPWS"), used to avoid Controlled Flight Into Terrain ("CFIT") accidents.[3] As such, the RA must operate continuously, and without interference, during all phases of flight.

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[3] "The experience with GPWS and Controlled Flight Into Terrain, or CFIT, is more dramatic. Between 1946 and 1955, large passenger aircraft averaged 3.5 fatal CFIT accidents a year. Think of it: a fatal CFIT accident about every 15 weeks. Through the mid-70s we were still averaging two fatal passenger airline accidents per year due to CFIT. In contrast, no jet operator has suffered such an event in U.S. airspace since 1974." Excerpt from speech by Nicholas A. Sabatini, FAA Associate Administrator for Aviation Safety. May 12, 2006.

The radio altimeter's dramatic improvements to aviation safety worldwide have made it required equipment on onboard almost all medium- to large-scale commercial airframes. All UPS aircraft are fitted with dual redundant radio altimeter systems operating in the 4.2-4.4 GHz band.

The radio altimeter system sweeps or pulses through almost all of the 200 MHz ARNS allocation to achieve the necessary altitude resolution needed for precise navigation.[4] Preliminary studies submitted to the International Civil Aviation Organization ("ICAO") based on generic RA performance metrics have shown potential interference from new adjacent terrestrial services in the 3.7-4.2 GHz band during low level operations such as landing and takeoff.

Combined with the Global Positioning System ("GPS") location data, the radio altimeter is one of the main aircraft sensor systems used during the critical phases of flight such as landing and takeoff in low/zero visibility weather. Any interference that compromises the RA's receiver performance can immediately affect aircraft safety systems such as the autopilot function or the GPWS. Therefore, all interference to the radio altimeter, no matter how brief, must be considered a safety of flight issue.

SUMMARY

For all the foregoing reasons, UPS urges the Commission to consider seriously

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[4] See Comments of Aviation Spectrum Resources, Inc. ("ASRI") in the Matter of Spectrum Task Force Requests Information on Frequency Bands Identified by NTIA as Potential Broadband Spectrum, ET Docket No. 10-123. April 22, 2011.

any action in this proceeding that could affect aviation safety. Protection of radio altimeters operating in the 4.2 to 4.4 GHz band is particularly critical. As such, UPS strongly recommends that the Commission engage the Federal Aviation Administration ("FAA") to fully assess the potential for radio altimeter interference before allowing commercial wireless operations in the 3.7 to 4.2 GHz band.

Respectfully submitted,

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