Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 15 of the	)	ET Docket No. 98-153
Commission's Rules Regarding	)	
Ultra-Wideband Transmission	)	
Systems	)	

PETITION FOR RECONSIDERATION OF SATELLITE INDUSTRY ASSOCIATION

The Satellite Industry Association ("SIA") hereby petitions for reconsideration of the First Report and Order ("R&O") in the above-captioned proceeding.

SIA is a national trade association representing the leading U.S. satellite manufacturers, service providers, and launch service companies. For reasons that are discussed below, the rules adopted in the R&O will expose fixed satellite service ("FSS") systems operating in the 4 GHz band (*i.e.*, 3.7-4.2 GHz) to harmful interference from ultra-wideband ("UWB") devices. To ensure that FSS systems receive adequate protection, SIA seeks reconsideration of the R&O.

INTRODUCTION

SIA participated in the proceedings culminating in the adoption of the R&O, filing comments bringing to the Commission's attention the special concerns that the UWB proposals raised for satellite systems.[1] Although SIA supported (and continues to support) the Commission's goal of exploring the potential for deployment of UWB technology, it urged the Commission to proceed cautiously. SIA suggested that, prior to approving any UWB applications, the Commission require solid technical evidence that the UWB devices could operate without causing interference to commercial and

[1] Comments of the Satellite Industry Association, filed September 12, 2000.

government users. In particular, SIA expressed concern with the potential adverse impact of UWB transmissions within spectrum allocated to fixed and mobile satellite services.

In the R&O, the Commission determined that it would permit the marketing and operation of certain types of new products incorporating UWB technology.[2] It found that "[w]ith appropriate technical standards, UWB devices can operate using spectrum occupied by existing radio services without causing interference."[3] According to the Commission, the technical standards it adopted were "designed to ensure that existing and planned radio services . . . are adequately protected."[4] To that end, the Commission stated that it would proceed "cautiously in authorizing UWB technology" and based certain technical standards on an assessment that had been made by the National Telecommunications and Information Administration ("NTIA").[5]

SIA agrees with the Commission's cautious approach, and supports its desire to protect existing services from interference. In one respect, however, the rules adopted in the R&O conflict with the Commission's stated objectives. Absent modification, these rules would subject FSS systems downlinking on 4 GHz C-band frequencies to harmful interference from UWB devices.

FSS systems make widespread use of the C-band. Among other things, they use C-band frequencies for program distribution to cable head-ends and radio/TV broadcast stations, broadband communications to U.S. Navy vessels, commercial

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2 *In the Matter of Revision of the Commission's rules Regarding Ultra-Wideband Transmission Systems*, First Report and Order, ET Docket 980-153, FCC 02-48, *adopted* Feb 14, 2002, *rel* Apr 22, 2002 ("*R&O*"). "UWB devices operate by employing very narrow or short duration pulses that result in very large or wideband transmission bandwidths." *Id.* at 2.

3 *R&O Order* at 2.

4 *R&O Order* at 2.

5 *R&O Order* at 2. *See Assessment of Compatibility Between Ultrawideband Devices and Selected Federal Systems*, NTIA Special Publication 01-43, U.S. Department of Commerce, National Telecommunications and Information Administration, January 2001 ("NTIA Report"). *See also The Temporal and Spectral Characteristics of Ultrawideband Signals,* U.S. Department of Commerce, National Telecommunications and Information Administration, January 2001.

weather data distribution to airlines and pilots, and position location and status for trucking fleets. UWB interference could jeopardize the billions of dollars that have been invested in FSS systems for commercial and national security purposes, and could interrupt vital FSS services. Accordingly, SIA seeks reconsideration.

DISCUSSION

The Commission Should Modify the Emission Limits and Protection Distances between UWB Devices and Earth Stations in the 4 GHz Band, Taking Required Separation Distances Into Account

In the R&O, the Commission relies upon NTIA's analysis of the interaction between UWB transmitters and FSS systems in the 4 GHz band to determine, among other things, the maximum UWB emission levels that could be allowed without causing interference.[6] The Commission's discussion, however, is internally inconsistent and does not give proper weight to a key element of NTIA's analysis.

The R&O is internally inconsistent because it develops protection criteria based on indoor operation of UWB devices, but permits those devices to operate both indoors and outdoors. The discussion of FSS interference issues appears in paragraph 139 of the R&O, and speaks only to the emissions limits required to protect FSS earth stations from indoor UWB devices. In this discussion, the Commission explicitly relies on the fact that, for indoor UWB operation, there will be a building between a UWB device and FSS earth stations that will serve as a buffer, limiting the potential for interference.

The rules that the Commission adopted, however, permit both indoor and outdoor operation of handheld UWB devices.[7] Those rules establish the same

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6 *See R&O* at Table 6 and Table 7 (located below ¶¶ 123 and 144, respectively).

7 *See R&O* at Appendix D, Rule 15.519(a)(3).

emissions limits for indoor and outdoor operation,[8] notwithstanding the fact that in the case of outdoor operation one cannot assume that there will be a building in place to attenuate the interference. The Commission should rectify this discrepancy.

In addition, the Commission did not meaningfully address the minimum separation distances specified in the NTIA Report for protecting FSS earth stations. The NTIA Report included two tables that assess the effects of UWB devices for average and peak power interactions.[9] These tables show required separation distances for FSS interference protection that range from 630 meters to tens of kilometers.

These minimum separation distances are well beyond the distances one would expect in practice for handheld UWB devices operated outdoors. It is inevitable that persons using these devices will come closer than 630 meters, much less tens of kilometers, to C-band FSS earth stations.

Put another way, the outdoor emissions limits that the Commission has adopted for handheld UWB transmissions are premised on separation distances that are well beyond the separations that one can expect in actual practice. In order to protect FSS earth stations from UWB interference, therefore, the Commission needed to adjust its maximum outdoor emissions limits for handheld UWB devices to take into account the smaller separation that will occur in practice between those devices and FSS earth stations. The Commission did not make this adjustment, rendering its outdoor emissions limits for handheld UWB devices insufficient to protect FSS earth stations, and

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8 *See R&O* at Appendix D, Rules 15.517(c) and 15.519(c) (establishing same –41.3 dBm EIRP limit for indoor and outdoor operation between 3100 and 10600 MHz.

9 *See* NTIA Report at viii-ix, Table 1 and Table 2: "Summary of Assessment of Effects of UWB Devices on Federal Systems For Average Power Interactions" and "Summary of Assessment of Effects of UWB Devices on Federal Systems For Peak Power Interactions with Digitally Modulated Systems," respectively. *See also R&O* at Appendix D, Rules 15.517(c) and 15.519(e).

undermining its stated objective of ensuring that existing services are protected against interference from UWB transmissions.

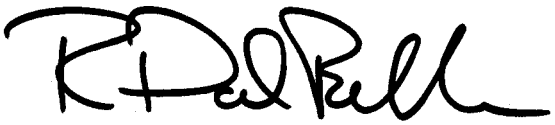
CONCLUSION

For the reasons set forth herein, the Commission should reconsider and modify the rules it adopted in the R&O.

Respectfully submitted,

SATELLITE INDUSTRY ASSOCIATION

By:



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