BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules	)	ET Docket 98-153
Regarding Ultra-Wideband Transmission Systems	)	

To: The Commission

COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION

The Satellite Industry Association (SIA) submits these comments in response to the Commission's Notice of Proposed Rule Making ("NPRM") in the above-captioned docket. The Commission has solicited comment on a proposal to modify Part 15 of its Rules with the object of permitting a variety of applications employing ultra-wideband[1] ("UWB") technology. SIA supports the Commission's desire to explore the potential for deployment of UWB technology, but it urges the Commission to exercise its spectrum management responsibility by proceeding cautiously, and requiring solid technical evidence that any UWB application(s) it ultimately approves can operate without causing interference to existing commercial and government spectrum users.

[1] UWB transmitters operate by sending short, high-energy pulses across very wide expanses of the radiofrequency spectrum.

I. Statement of Interest

SIA is a national trade association representing the leading U.S. satellite manufacturers, service providers, and launch service companies. SIA serves as an advocate for the U.S. commercial satellite industry on regulatory and policy issues common to its members. With member companies providing a broad range of manufactured products and services, SIA represents the unified voice of the U.S. commercial satellite industry.[2]

Action by the Commission to license UWB applications without ensuring that the existing commercial and government users are fully protected would adversely affect the interests of SIA's members, and the U.S. satellite industry generally. With diverse membership interests across a broad range of spectrum uses, SIA has a strong interest in all matters affecting potential changes in the Commission's approach to spectrum management.

SIA is concerned about the potential adverse impact of UWB transmissions within spectrum allocated to and used by fixed and mobile satellite services. In particular, SIA is troubled by possible UWB interference in spectrum utilized by the Global Positioning System ("GPS"), mobile-satellite services ("MSS"), and other space-based services that operate in restricted bands such as those listed in Section 15.205 of the Commission's Rules.

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[2] SIA's members include: Boeing Commercial Space Company; COMSAT Corporation; Ellipso Inc.; Final Analysis Inc.; GE American Communications, Inc.; Globalstar, L.P.; Hughes Electronics Corp.; Lockheed Martin Corp.; Loral Space & Communications Ltd.; Motient Corp.; Motorola Inc.; Orbital Sciences Corporation; PanAmSat Corporation; Teledesic Corporation; TRW Inc.; and Williams Vyvx Services.

II. Discussion

In the *NPRM,* the Commission committed itself to ensuring that existing spectrum users are protected against interference.[3] To fulfill this commitment, the Commission must provide adequate time for evaluation of the individual forms of UWB technology and their specific impacts upon existing services. Until that evaluation has taken place, any conclusions about the outcome, even on a tentative basis, would be premature. For example, the Commission notes at the beginning of the *NPRM* that "UWB devices appear to be able to operate on spectrum already occupied by existing radio services without causing interference."[4] In light of the acknowledged lack of detailed technical results, there is no basis for this apparent conclusion regarding the actual compatibility of UWB applications with existing licensed services.

SIA is also concerned about the scope and timing of testing proposed. The Commission acknowledges the need to protect GPS, MSS, and other services in restricted bands[5]; however, the Commission proposes only a single round of testing with results due by October 30, less than six months after the issuance of the *NPRM.*[6] While that schedule may be adequate to obtain initial preliminary test results, SIA does not believe that it would allow an

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3 *See NPRM,* FCC 00-163, slip op. at 4 (¶ 7).

4 *NPRM,* FCC 00-163, slip op. at 1 (¶ 1).

5 *See NPRM*, FCC 00-163, slip op. at 14 (¶ 30).

6 *See NPRM*, FCC 00-163, slip op. at 1 (¶ 1) & 14 (¶ 31).

adequate time period for analyzing and critiquing the initial results, or for performing appropriate follow-up trials – thus shortchanging the overall public interest evaluation. The Commission has the responsibility to require comprehensive testing of any commercial technology before it is deployed in encumbered spectrum, rather than simply being prepared to react to the otherwise avoidable adverse results of harmful interference.

In particular, SIA urges the Commission to allow adequate time for thorough testing in restricted bands, given the presence in these frequencies of safety services and other existing operations that require sensitive signal discrimination.[7] These services include GPS, MSS, and the Satellite Digital Audio Radio Service ("SDARS") in the 2320-2345 MHz bands.

As an example, GPS satellites transmit at very low power, while the individual receiving units that rely on these transmissions for navigation and position location are widely dispersed. Numerous consumer and government GPS applications are supported, including aircraft navigation, fleet monitoring, and critical network timing and synchronization functions. A wide variety of users and industries, ranging from air traffic management to wireless telephony, have come to rely on the reliability and uninterrupted availability of GPS signals. Indeed, SIA commends the Commission's explicit recognition in the *NPRM* of the substantial contribution of GPS and its expanding commercial and public safety role, noting that "any harmful interference to GPS could have a serious

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[7] *See* 47 C.F.R. § 15.205(a).

detrimental impact on public safety, businesses and consumers,"[8] and expressing its determination that "it is vitally important to ensure that critical safety systems, including GPS operations, are protected from harmful interference."[9]

SIA also urges the Commission to refrain from making any premature judgments regarding the significant issues that are before it, particularly if they will be premised solely on the initial data expected at the end of October. SIA encourages the Commission to adopt a thorough testing program. The broad variety of UWB applications under consideration by the Commission and the detailed associated tests necessary to evaluate each technology will require more than one submission of test data in order to ensure that all incumbent satellite services are protected from harmful interference from the introduction of UWB transmissions. SIA also requests that the Commission allow for adequate time after submission for thorough analyses of test results by all concerned parties before it makes any final decisions concerning spectrum use by UWB devices.

In addition, SIA encourages the Commission to give careful consideration to the issue of aggregate interference from UWB emitters. In the instant *NPRM,* the Commission notes that its Technical Advisory Counsel ("TAC") has found that multiple co-located UWB devices would cause "no

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8 *NPRM,* FCC 00-163, slip op. at 13 (¶ 28).

9 *NPRM,* FCC 00-163, slip op. at 13 (¶ 29).

significant rise in the RF noise floor."[10] While respectful of the members of the TAC, SIA notes that the TAC's conclusion appears to be based solely upon consideration of submissions from firms that are advocates of UWB technology, without explanation of certain details, such as what level of increase in the RF noise floor should be considered "significant." SIA believes that the issue of aggregate interference from UWB emitters, which could be widely deployed in certain applications, merits much more in-depth consideration and, therefore, strongly urges the Commission to fully consider it on the basis of a full record including analysis of the various test data that have yet to be submitted.

Some applications of UWB technology, such as certain types of ground-penetrating radars or through-the-wall imaging devices, may be able to operate in parts of the spectrum without causing any harm to other spectrum users. New rules geared specifically to UWB operation would, of course, be required, as contemplated by the *NPRM*. Such regulations, if validated by the results of ongoing tests, should specifically encompass the limitations previously placed on temporary authorizations granted to various entities that have been experimenting with UWB technology pursuant to FCC-granted waivers.[11]

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[10] *NPRM*, FCC 00-163, slip op. at 21 (¶46).

[11] *See* Letters from Dale Hatfield, Chief, Office of Engineering and Technology to David Hilliard, Counsel to Time Domain Corporation, Ronald LaBarca, President, U.S. Radar Inc., and Terry Mahn, Counsel to Zircon Corporation (dated June 29, 1999). *See also* Letter from William Hatch, Acting Administrator, Office of Spectrum Management, NTIA, to Dale Hatfield, Chief, OET, dated June 15, 1999 (attaching conditions for approval of Part 15 waivers).

Finally, SIA believes that the Commission needs to take into consideration the nature of satellite operations conducted in the effected frequency bands. Millions of American citizens and business have come to rely on satellites to provide telecommunications (e.g. MSS/FSS), public safety (e.g. GPS), and entertainment (e.g. SDARS) services. Accordingly, the Commission should develop appropriate measures to protect these incumbent services from harm. Such an approach would meet the Commission's objective of protecting existing services from interference without unduly constraining UWB development.

III. Conclusion

For the foregoing reasons, SIA urges the Commission to ensure that there is a thorough evaluation of interference risks of UWB transmissions prior to permitting introduction of applications using this technology. Until the Commission and existing spectrum users have had an opportunity fully to analyze, critique and supplement if necessary the UWB test results contemplated by the *NPRM*, the Commission will not have the data necessary to consider all of the factors relating to possible introduction of UWB technology into extensively used frequency bands.

Respectfully submitted,

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