

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

In the Matter of)	
Vista Controls' Petition for Waiver of Sections)	File No. _____
15.209, 15.511, and 15.521 of the)	(DA 03-2631)
Commission's Rules)	

To: Office of Engineering and Technology

**REPLY COMMENTS OF IEEE 802.18 IN SUPPORT OF OPPOSITIONS TO VISTA
CONTROLS' PETITION FOR WAIVER AND STA**

IEEE 802.18 the Radio Regulatory Technical Advisory Group (the "RR-TAG") in IEEE 802¹ respectfully offers its Reply Comments In Support of Oppositions to Vista Controls' Petition for Waiver in the above-captioned Proceeding.²

IEEE 802, as a leading consensus-based industry standards body, produces standards for wireless networking devices, including wireless local area networks ("WLANs"), wireless personal area networks ("WPANs"), and wireless metropolitan area networks ("Wireless MANs").

This document was prepared and approved by the RR-TAG and was also approved by the IEEE 802.11 and IEEE 802.15 Working Groups, who met in the same venue during the time this document was prepared.

IEEE 802.18 and the referenced working groups are interested parties in this Proceeding and we appreciate the opportunity to provide these comments to the Commission.

¹ The IEEE Local and Metropolitan Area Networks Standards Committee ("IEEE 802" or the "LMSC")

² This document represents the views of the IEEE 802.18 and the referenced working groups. It does not necessarily represent the views of the IEEE as a whole or the IEEE Standards Association as a whole.

INTRODUCTION

1. The IEEE 802.18 RR-TAG, together with the IEEE 802.11 and 802.15 Working Groups, hereby express their strong opposition to the pending request filed by Vista Controls (“Vista”) seeking waiver of Sections 15.209, 15.511 and 15.521 of the Commission’s rules to permit the authorization, importation, and operations of the QUPID ultra-wideband (“UWB”) surveillance system.
2. The IEEE 802.18 RR-TAG, together with the IEEE 802.11 and 802.15 Working Groups, also strongly oppose the related application of Vista seeking special temporary authority (“STA”) for deployment of the QUPID system.
3. The Office of Engineering and Technology (“OET”) should summarily deny Vista’s waiver request for failing to satisfy the Commission’s waiver standards. Additionally the waiver request and STA application should be denied as grossly excessive in light of the Commission’s cautious approach towards the implementation of UWB technology reflected in its recently adopted UWB rules. The parameters requested in the waiver and STA request clearly are not within the legal limits or the spirit of the FCC’s First Report and Order and Memorandum Opinion and Order on UWB.³
4. Denying Vista’s requests would avoid setting a precedent that OET would be compelled to follow in connection with other parties seeking comparable relief at equally damaging power levels.⁴

³ See Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems, First Report and Order, 17 FCC Rcd 7435 (April 22, 2003) (“*UWB Report and Order*”); Memorandum Opinion and Order and Further Notice of Proposed Rule Making, 18 FCC Rcd 3857 (2003) (“*UWB MO&O*”).

⁴ Under [*Melody Music, Inc. v. FCC*, 345 F.2d 730 (D.C. Cir. 1965)] and its progeny, the Commission is obligated to assure comparable treatment of similarly situated parties.

**VISTA’S WAIVER REQUEST FAILS TO SATISFY THE COMMISSION’S
STANDARDS FOR GRANT OF A WAIVER**

5. The Commission may waive its rules only if there is good cause to do so.⁵

6. Vista has failed to demonstrate that there is any valid reason for granting such a waiver.

In general, waiver is appropriate if: *(1) special circumstances warrant a deviation from the general rule; or (2) such deviation would better serve the public interest than would strict adherence to the general rule.*⁶

7. Vista, however, has not shown that its QUPID system presents any unusual or special circumstances or that application of the Commission’s UWB rules to its system would be contrary to the purposes of the rules’ power and emission limits.

8. Indeed, the Commission when formulating its UWB rules contemplated the type of radar that Vista proposes.

9. Additionally the Commission’s rules require coordination prior to use, and users of UWB imaging devices are required to supply operational areas and a variety of other data to the FCC Office of Engineering and Technology.⁷

10. Since Vista is seeking a STA in addition to the waiver, it is not clear that the required coordination ever occurred. Yet, in the waiver request and related documentation, it is abundantly clear that Vista is delivering these systems to customers and that they are in fact in operation. Vista seems to be asking for this waiver and the associated STA in an attempt to legitimize what appear to be existing deployments of the QUPID system that do not comply with the Commission’s rules.

⁵ See 47 C.F.R. § 1.3

⁶ See 47 C.F.R. § 1.925(b)

⁷ See 47 C.F.R. § 15.525

11. Rather than granting the waiver and STA request, we respectfully suggest that the Commission should investigate the current deployment status of Vista's QUPID systems and consider whether enforcement action may be appropriate.

THE POWER LEVELS REQUESTED BY VISTA ARE FAR IN EXCESS OF WHAT IS ALLOWED UNDER THE COMMISSION'S EXISTING UWB RULES

12. As others who have filed Oppositions to Vista's waiver request and STA application have stated, Vista is seeking authority to operate the QUPID system at effective isotropic radiated power ("EIRP") levels far in excess of those permitted under Subpart F of Part 15 of the Commission's rules governing UWB operations.

13. The QUPID system operating pursuant to the requested waiver or STA would have a bandwidth of approximately 500 to 1000 MHz, which equates to an approximate requested total peak power range of $[40+20*\log(500/50)] = 60$ dBm to $[40+20*\log(1000/50)] = 66$ dBm.

14. Thus granting the waiver would permit the in-band transmission of approximately 1 to 4 kilowatts of peak power.

15. Vista's stated peak power of 40 dBm in a 50 MHz bandwidth and RMS average power of -10 dBm in a 1 MHz bandwidth exceed the Commissions' current UWB power limits by 40-46 dB (a factor of approximately 10,000-40,000) and 31.3 dB (a factor of slightly more than 1,000) respectively.

16. This power would span the spectrum from 1.8 to 2.8 GHz, including across critical services below 3.1 GHz that to date the FCC has protected for compelling reasons of public safety and national security, including licensed services, such as WCS in the 2.3 GHz band, and other uses such as IEEE 802.11TM WLANs and IEEE 802.15TM WPANs at 2.4 GHz.

17. Because the Commission's rules define "bandwidth" for UWB devices as "10 dB down," the Vista-proposed operations at 1 - 4 kW could radiate on the order of 100 - 400 watts of peak power across adjacent bands that, as pointed out below, include a variety of sensitive services.

18. The immediate consequence of granting this waiver would be to effectively alter the Commission's rules regarding allowable UWB power levels, both in and out of band.⁸

19. The resulting high power levels raise significant concerns regarding the potential for harmful interference from the QUPID system to authorized systems operating below 3.1 GHz, including critical operations of bands restricted for safety-of-life operations in the National Airspace, GPS (including GPS-enabled E-911), as well as the Personal Communications Service ("PCS"), IEEE 802.11TM WLANs and IEEE 802.15TM WPANs at 2.4 GHz, and other services.⁹

20. The existing UWB rules seek to protect authorized operations from harmful UWB interference through rigid power limits, spectrum restrictions, and other regulatory requirements.^{10,11}

21. These restrictions reflect the Commission's sensibly cautious approach to UWB implementation due to a growing body of test data and the absence of definitive operational experience with the technology.¹²

⁸ Under [Melody Music, Inc. v. FCC, 345 F.2d 730 (D.C. Cir. 1965)] and its progeny, the Commission is obligated to assure comparable treatment of similarly situated parties.

⁹ Contrary to Vista's claims in its waiver request that QUPID operations do not degrade GPS performance, independent testing, the results of which are part of the record in the UWB proceeding, confirms that operation of UWB devices do result in harmful interference to GPS receivers. See *UWB Parameters for EMC Coexistence With Legacy Systems*, Report of The Defense Advanced Research Projects Agency, Networking in Extreme Environments Programs (released June 31, 2003); NTIA Special Publication 01-45, *Assessment of Compatibility between Ultra-wideband Systems and Global Positioning System (GPS) Receivers*, February 2001; NTIA Report 01-384, *Measurements to Determine Potential Interference to GPS Receivers from Ultra-wideband Transmission Systems*, February 2001; and *Potential Interference to GPS from UWB Transmitters Phase II Test Results: Accuracy, Loss-of-Lock, and Acquisition Testing for GPS Receivers in the Presence of UWB Signals*; Sponsored by the U.S. Department of Transportation, Study Conducted by Stanford University; Version 3.0, March 16, 2001.

¹⁰ See 47 C.F.R. § 15.511

¹¹ Vista's proposed system is in effect a surveillance system that is subject to licensing requirements established only months ago in the *UWB MO&O* and is limited to parties eligible for licensing under the provision of Part 90 of the Commission's Rules. Furthermore, surveillance systems must operate within certain frequency ranges and at power levels that Vista's proposed system greatly exceeds.

¹² See UWB Report and Order, 17 FCC Rcd at 7444

22. Consistent with this approach, the Commission has made it clear that consideration of more flexible UWB standards will be appropriate only after “additional experience has been gained with UWB operations.”¹³

23. We believe that additional experience and studies are necessary to fully understand the possible impact of even those conservative UWB regulations.

24. Recent statements from OET seem to support that view. “*We urge the IEEE to perform the technical analyses to ensure that any UWB standard it develops will not cause levels of interference beyond that already anticipated by the rules ...*”¹⁴

25. To approve step function increases of 40 dB in peak power and 31.3 dB in RMS average power would clearly be totally inconsistent with the Commission’s wisely chosen, conservative approach.

26. The Commission’s cautious approach is supported by the engineering community as the minimum necessary for the protection of existing systems. Renowned researchers in the field have recently written that “[t]he conservative masks approved in the FCC’s First Report and Order and an even more restrictive set under development for Europe by the European Telecommunication Standards Institute (ETSI) Task Group 31 (TG31) - in close cooperation with the European conference of Postal and Telecommunications Administrations (CEPT) SE24, should ensure that emerging UWB radio products will be safe.”¹⁵ Addressing the need to design systems that prevent UWB interference, these researchers also state that “*only a large research effort, and scrutinizing analysis and measurements will be able to help establish the most appropriate set of rules for this capable yet disruptive spectral overlay technology.*”

¹³ See UWB Report and Order, 17 FCC Rcd at 7444

¹⁴ See the article at <http://rcrnews.com/cgi-bin/news.pl?newsId=15071&type=news&bt=fcc>

¹⁵ See Domenico Porcino and Walter Hirt, *Ultra-wideband Radio Technology: Potential and Challenges Ahead*, IEEE Communications Magazine, July 2003, at 72

27. Granting Vista's waiver and STA requests to operate with unprecedented power levels so far above Part 15 limits would clearly create a destabilizing situation with little or no potential for real economic value to the nation and in a *de facto* manner change the spectrum allocations below 3.1 GHz.

28. On the other hand, denial of the relief that Vista seeks would avoid the establishment of an unfortunate precedent that risks eviscerating the UWB rules, given that under [Melody Music, Inc. v. FCC, 345 F.2d 730 (D.C. Cir. 1965)] and its progeny, the Commission is obligated to assure comparable treatment of similarly situated parties.

29. Following an imprudent grant of the Vista waiver request or STA application, OET would be compelled to grant factually comparable requests, or else explain the reasons supporting its disparate treatment. This, in turn, would almost certainly lead to a flood of similar requests filed by parties eager, like Vista, to avoid the restrictions on UWB operations below 3.1 GHz that are essential to the interference-free operations of authorized services.

30. We believe that exceptions should not be carved out of the UWB rules – which were the product of the careful balancing of all competing interests – before those rules have even been tested through the introduction of UWB devices in the marketplace.

CONCLUSION

31. For the foregoing reasons, we respectfully request that OET deny the waiver request and STA request of Vista related to its proposed QUPID operations.

Respectfully submitted,

/s/

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