Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Commission Seeks Comment on Emergency Communications by Amateur Radio and Impediments to Amateur Radio Communications	)	**GN Docket No. 12-91**
	)	

To the Commission:

Comments from Nickolaus E. Leggett

I am a certified electronics technician (ISCET and iNARTE) and an Extra Class amateur radio operator (call sign N3NL). I hold an FCC General Radiotelephone Operator License with a Ship Radar Endorsement. I am an inventor holding three U.S. Patents. My latest patent is a wireless bus for digital devices and computers (U.S. Patent # 6,771,935). I have a Master of Arts degree in Political Science from the Johns Hopkins University.

I am one of the original petitioners for the establishment of the Low Power FM (LPFM) radio broadcasting service (RM-9208 July 7, 1997 subsequently included in MM Docket 99-25). I am also one of the petitioners in the docket to establish a low power radio service on the AM broadcast band (RM-11287).

Response to Section 1, Part b, Page 2 of the Public Notice

The Commission presented the following question: "Under what circumstances does the Amateur Radio Service provide advantages over other communications systems in supporting emergency response or disaster relief activities?"

Amateur radio has the multiple advantages of skilled operators with technical knowledge who are operating their own equipment which is operated without the need for commercial electrical power. Amateur radio equipment is designed so that it can be operated from and/or recharged by a 12-volt power source such as an automobile electrical system. Amateur radio operators are knowledgeable about electronics and radio and they can often service their equipment in the field.

In an intense and long duration emergency such as a major earthquake, solar geomagnetic storm, or an electromagnetic pulse (EMP) attack, amateur radio operators can improvise radio communications when other major communications systems have been disabled. If necessary, they can build improvised transmitters such as basic oscillator transmitters or even spark-gap transmitters to send Morse code messages when other communications systems have been disabled. The spark-gap transmitter consists of a high-voltage source (battery, interrupter, and transformer coil) controlled by a Morse code key and attached to an improvised long wire antenna. This lowly spark-gap transmitter has the advantage that it transmits a broadband signal that can be easily received by a simple amplitude modulation (AM) receiver. This receiver can be a common portable radio or an improvised home built radio with a simple diode detector. No complexity such as a beat frequency oscillator (BFO) is required. We don't want such primitive spark gap stations on the air in normal times, but they certainly can be a useful improvised tool in a long-duration major emergency. Amateur radio operators have the right skill sets and attitudes to accomplish such improvised communications.

Response to Section 2, Part a, Page 3 of the Public Notice

The Commission asked the following questions: “What private land use restrictions on residential antenna installations have amateur radio operators encountered?” and “What are the effects of unreasonable and unnecessary restrictions on the amateur radio community’s ability to use the Amateur Radio Service?”

In my case, I live in a condominium complex where all external antennas are prohibited. Even though I own my condominium unit, I am prohibited from establishing any type of outdoor amateur radio antenna no matter how small and inconspicuous it may be. This type of private restriction is widespread in this location (Reston, VA) and throughout Northern Virginia.

My condominium building is reinforced concrete and brick that inhibit the use of any type of indoor antenna for amateur radio operation. Thus I am restricted to portable or mobile operation away from my home. This greatly restricts my participation in amateur radio since I spend much more time at home than outside, especially in periods of inclement weather or during the winter. The resultant effect of this situation is that I am prohibited from operating an amateur radio station except if I travel away from my home. This reduces the value of my Extra Class amateur radio license, and limits the public service that I can provide.

Respectfully submitted,

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Appendix A – My Patents and Document References

Some of my document references are listed below:

United States Patent 6,771,935, Wireless Bus August 3, 2004
United States Patent 3,280,929 Ground-Effect Machine October 25, 1966
United States Patent 3,280,930 Ground-Effect Vehicle October 25, 1966

"Demonstration and Development of Amateur Radio Applications of Natural Vacuum Electronics"; Nickolaus E. Leggett, N3NL - 22nd AMSAT Space Symposium and Annual Meeting October 8-10, 2004 in Arlington, Virginia

"A 'Lighthouse' Protocol for Random Microwave Contacts", Nickolaus E. Leggett, N3NL, QEX The Experimenter's Exchange – Technical Notes July/August 2004 – American Radio Relay League, Newington, CT.

Wireless bus invention – U.S. Patent # **6,771,935**

Abstract

In order to avoid mechanical assembly problems and transmission of undesired electrical currents among circuit cards or boards in a telecommunications switch or similar digital device, a conventional hard-wired midplane bus is replaced by a wireless bus. The wireless bus includes a radio frequency or light wave transceiver on each card. Antennas on respective cards can either be oriented within direct line-of-sight of each other, or can project into a waveguide which directs the transmitted signals past all the other antennas. For example, the waveguide may be a metal enclosure which surrounds all the cards. Alternatively, respective aligned apertures in the cards can define a continuous transmission path. A data rate exceeding 1 megabit per second and a transmission power on the order of 1 milliWatt are preferred, since the bus is intended for use within a single switch housing. Radio frequencies in the middle to high microwave range or light frequencies in the visible range are preferred for providing sufficient bandwidth and to facilitate servicing.