

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

In the Matter of)	
)	
Promoting Expanded Opportunities for Radio Experimentation and Market Trials under Part 5 of the Commission’s Rules and Streamlining Other Related Rules)	ET Docket No. 10-236
)	
)	
2006 Biennial Review of Telecommunications Regulations – Part 2 Administered by the Office of Engineering and Technology (OET))	ET Docket No. 06-155
)	
)	

To the Commission:

**Additional Comments from Nikolaus E. Leggett,
Inventor, Analyst, Licensed Radio Operator**

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 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 invented this invention based on my experience in amateur radio. Refer to Appendix A for details of this invention.

I have a Master of Arts degree in Political Science from the Johns Hopkins University (May 1970)

Additional Comments

This is my second set of comments in these dockets. I submitted my first set of

comments on April 1, 2011.

Anechoic Chambers and Faraday Cages

This set of comments addresses the subject of anechoic chambers and Faraday cages (Paragraph 82 on Page 33 of the Notice of Proposed Rulemaking). These shielded enclosures have been used for decades as a means for conducting experiments without interference with radio users and as a means for keeping one's experiments completely private. In effect, each such shielded enclosure is a private world where one can carry out fully uninhibited radio experimentation. It is as if the experiments are on the far side of the Moon. No one can detect them and any frequency or combination of frequencies can be used.

As an inventor, I strongly support the Commission's proposal to codify the policy of not requiring an experimental license for experiments conducted within shielded chambers. Each such chamber should be a region of full technical freedom where the experimenter can do what he or she wants and can keep their work totally private without having to report its details to anyone. Keeping one's work proprietary is very important to independent inventors as well as to small and large companies. In addition, most innovators of technology are strongly averse to elaborate bureaucratic requirements that get in the way of their innovative work. The more free the environment, the more effective the innovation is.

Technical Standards for Anechoic Chambers and Faraday Cages

The Commission should only establish minimum technical standards for anechoic chambers and Faraday cages if there have been significant problems with them. My own impression is that there have not been problems. Thus we should not impose additional

burdens and costs on innovators when there is no major problem to solve.

President Obama has requested that Federal agencies should review their regulations and remove those that are unnecessary. Various conservatives and Republicans have made similar requests. The same caution should be applied to any new regulations. We should ask ourselves, is this new regulation really necessary or are things working well on their own. It is quite clear that industry already operates reasonable testing in shielded environments based on their own standards.

Independent Experimenters and Inventors

Independent inventors should continue to be allowed to build their own shielded chambers for their inventive work. They need this freedom because the cost of do-it-yourself is a lot lower and their experiments may require a special design of shielded chamber.

For example, I would be interested in working with an updated approach to spark-gap radio transmission. The best place to do the initial work with this technology would be in a shielded chamber. However, like most independent inventors I certainly cannot afford a commercial shielded chamber. I could build such a device using much of the technology that is used to shield modern radio transmitters to accomplish quite reasonable containment of any broadband emissions from the experimental circuit. Then later on, I could test the developed experimental equipment on a “Technical Freedom” sub band as I proposed in my other set of comments (April 1, 2011).

The Commission must make sure that its rules do not inhibit independent inventors and very small companies. Establishing elaborate and strict regulations for shielded chambers will definitely damage the ability of independent inventors and small

companies to develop significantly novel radio frequency technology. Our economy needs their participation in the development of new technological products.

A Possible Compromise

If the Commission decides to go ahead with technical regulations for anechoic chambers and Faraday cages, then please consider a compromise where chambers used to test low-power RF sources of under 100 Watts are not regulated. In addition, shielded chambers used to test Amateur Radio service experimental apparatus operated on amateur radio frequency allocations should not be regulated at all.

Respectfully submitted,

**Nickolaus E. Leggett
Analyst, Inventor, and FCC licensed radio operator
1432 Northgate Square, #2A
Reston, VA 20190-3748
(703) 709-0752**

April 5, 2011

Appendix A – Summary of U.S. Patent 6,771,935 – Wireless Bus

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.