

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

In the Matter of)
)
Promoting the Availability of Diverse and) **MB Docket No. 16-41**
Independent Sources of Video)
Programming)
)

To: The Commission:

Comments of Nickolaus E. Leggett, Certified Electronics Technician, Amateur Radio Operator (N3NL), GROL Licensee, Inventor, and Analyst

I am a certified electronics technician (iNARTE and ISCET) and an Extra Class amateur radio operator (call sign N3NL). I also 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 (1970).

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). I have filed a total of well over 200 formal comments with the FCC over the years since the 1970s. I have filed comments with other Federal agencies as well including the USPTO, NASA, FAA, FERC, EPA, and the TSA.

Technology and the Opportunity for Diversity

One of the major consequences of technological progress is the creation of opportunities for participation in the video and audio programming marketplace. Over historical time these opportunities have increased.

At this point in time, technology is opening up the millimeter wave spectrum that allows a truly huge amount of video and audio programming to be made available to urban audiences. In these comments, I am discussing my Lighthouse Protocol that facilitates this use of the millimeter wave spectrum. In the Lighthouse Protocol, a rotating millimeter wave pencil beam delivers program content to receivers established in a particular geographic area. (Reference One)

This use of a beam sweeping over the receivers provides broadcast service using a narrow and low-power “pencil beam” of modulated millimeter waves. The receivers store the packets of digital program content and assemble them into a continuous flow of program content.

This type of technology would provide many opportunities for diversity, if the technology is approved for use by the Commission.

Regulatory Steps for Opportunity and Diversity

The Commission should establish a new radio and television broadcasting service on a portion of the millimeter waves. This service should be available to individuals and to non-profit organizations without any auction mechanism. Spectrum auctions should be avoided because they favor very rich participants, and they discriminate strongly against individuals and groups that do not have ample resources.

This new service would be identified as the **American Citizens Broadcasting Service** (ACBS) and any United States citizen and/or non-profit group would be allowed to license and

operate a millimeter wave video and/or audio broadcast station. The Lighthouse Protocol, discussed above, would be very useful for the ACBS, but a variety of other broadcast technologies could be used as well.

A diversity of owners and operators would be active in the ACBS and a large number of small broadcast stations would be available for diverse video programming. Many of these stations would be in urban areas. Minority and new participants would even be able to own their own broadcast stations to broadcast the program material that they create. This would give them substantial freedom to create and air their own productions. You always have more freedom when you actually own and operate the “theatre” or “printing press”

Individuals and Small Entities must be Owners

The creators of new program content must have the opportunity to actually own the stations that broadcast their content. This increases diversity because each diverse owner inherently has an increased choice of program content. If I want to sing opera, I have more choice if I own a broadcast station. Similarly, if I want to create dramas, I have more opportunities if I own a station.

The Lighthouse Protocol can be implemented using a rotary antenna and a very low power millimeter wave transmitter. This system is controlled by a computer that feeds the program data packets to the rotating antenna at appropriate compass points. While this system is unusual, it does not cost nearly as much as a conventional video or audio broadcast station would cost. Its cost is within the resources of a middle class individual.

Respectfully Submitted,

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**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**

February 22, 2016

**Reference One: Nickolaus E. Leggett, “It’s Time for a Lighthouse Protocol”, Radio
World, June 30, 2011,**