

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

In the Matter of:

Streamlining Licensing Procedures
for Small Satellites

International Bureau Docket 18-86

Reply Comment 1 of Open Research Institute

18-July-2018

**1 Part 5 Licensing of Frequencies Within Amateur
Satellite Spectrum**

- a) ARRL and AMSAT comment that Part 5 licensees should not be granted privileges to operate within spectrum allocated to the Amateur Satellite Service. Open Research Institute, Inc. strongly supports ARRL and AMSAT's position.
- b) Part 5 licensees should be granted privileges only for spectrum that does not overlap the Amateur Satellite or terrestrial Amateur service. There is significant use of these frequencies by the terrestrial Amateur and Amateur Satellite service, including the launch of some 90 satellites so far and very many terrestrial operations which are subject to interference from space operations and would interfere with improperly-allocated space operations. Part 5 operations are simply incompatible with the ongoing Amateur use.
- c) We concur with ARRL and AMSAT that IARU is justified in refusing to coordinate satellites with Part 5 licenses within allocations of the Amateur Satellite service. IARU's present policy is not to make such coordinations unless it receives a written order to do so from the licensing nation. Nations should not issue such orders. Specifically, the United States government should not host Part 5 satellites within frequencies which are already allocated to the Amateur Satellite service and the terrestrial Amateur service.
- d) We apologize for having not addressed this obviously important issue in our original comment in this proceeding.

2 Proposed Tests for Pecuniary Interest in Educational Operation

- a) We believe that FCC and Amateur organizations should adopt tests for the pecuniary nature of educational and research satellite operations, which would be used to determine if a proposed educational or research operation includes pecuniary interest.

2.1 Why Is A Pecuniary Interest Test Necessary?

- a) Since the late 1970's, there has been a transformation of research performed at universities, purportedly operating as non-profits, *from a public good to intellectual property bearing monopoly rights*.
- b) This corresponds to a similar transition within corporations from mainly using their patent portfolios for cross-licensing with other corporations to operating patent licensing as a multi-billion-dollar income source.
- c) Very often these patents originate in publicly-funded research. Government and state grants pay for research. Patents upon the research results are filed by the researchers and the institution. The patent rights are licensed to, or sold to, for-profit companies.
- d) The government validated this practice with passage of the *Bayh-Dole Act* in 1981. This specifically allowed the results of publicly-funded research to be patented by the university, with the rights sold to for-profit companies.
- e) So, unfortunately, the reality today is that non-profit universities are operating as tax-exempt research departments of for-profit companies to whom they license or sell the results of research.
- f) In order to maximize income and motivate researchers to file patents, universities often pay bonuses for filing patents on research results, or institute profit-sharing plans with the universities often sharing 49% of their income from the results of publicly-funded research with private individuals.
- g) To get an idea of the scale of money in play, see the Forbes article on the recent CRISPR gene-editing patent. This one patent, originating in publicly-funded research, was expected to pay between \$100 Million and \$265 Million, and resulted in a \$1 Billion stock valuation on a licensing company: <https://www.forbes.com/sites/jacobsherkow/2017/02/21/how-much-is-a-crispr-patent-license-worth/>
- h) It is an unfortunate fact that the very citizens who pay tax levies which are turned into grants for universities become the defendants in lawsuits for infringing patents on research paid for with their own taxes. While this issue is out-of-scope for FCC, it illustrates the problematic nature of private income on publicly-funded research.
- i) There is also a pecuniary interest issue when research drives subscription to expensive scientific journals. This has driven an open publication

movement, which makes scientific articles available to everyone online at no cost.

- j) Conventional scientific journals came at a very high fee for annual subscription, often many thousands of dollars. The *aggregate* cost of subscribing to many scientific journals was often too high for the libraries of less-advantaged colleges and universities worldwide, while the editorial board of those same journals was generally academics who were unpaid and rewarded only by prestige. This drove academics to question the value of expensive scientific journals – the fees weren’t paying for the editorial board – and thus drove the movement toward open publication.
- k) An open publication makes articles available to everyone for free online, and generally funds its operations through author fees paid by the publishing university rather than subscription fees paid by the readers of journals. The average of author fees at this writing is \$660 per article, while journal subscriptions had previously cost each of the many subscribing institutions many thousands of dollars per year. Open publication drastically lowers costs for the university.
- l) A representative example of open publication is “PLOS”, Public Library of Science. But there are many.

2.2 Proposed Tests

- a) We propose these questions as a test of pecuniary interest for licensing within the Amateur Satellite service.
- b) Is the research being carried out in cooperation with for-profit partner organizations who stand to profit from the results of the research?
- c) Is there an arrangement to license the results of the research to any for-profit entity, for example in return for the right to make use of that entity’s intellectual property in the research?
- d) What is the intellectual property policy for this research? Will the results be copyrighted and patented, with technology transfer of exclusive rights to for-profit entities? Or, in contrast, will the research be released under royalty-free terms for everyone’s use?
- e) Does the institution grant bonuses or profit sharing to researchers as an incentive to file patents or to produce copyrighted property which can be licensed?
- f) Will the research papers be published in journals which charge high fees for a copy, or in contrast will they be published under an open publication policy which grants free online access to everyone?