To direct the Assistant Secretary of Commerce for Communications and Information to take certain actions to improve the management of electromagnetic spectrum, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. GUTHRIE introduced the following bill; which was referred to the Committee on ______________

A BILL

To direct the Assistant Secretary of Commerce for Communications and Information to take certain actions to improve the management of electromagnetic spectrum, and for other purposes.

Be it enacted by the Senate and House of Representa-
tives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Novel, Advanced Spec-
trum and Communications Technology Networks Pro-
motion Act”.

SEC. 2. FINDINGS.

Congress finds the following:

1. The National Telecommunications and Information Administration (NTIA) is the principal advisor to the President on all telecommunications and information issues.

2. The NTIA represents executive branch agencies on electromagnetic spectrum issues before the Federal Communications Commission.

3. Understanding radio frequency propagation characteristics is a critical component of making spectrum management and spectrum policy decisions.

4. The NTIA relies on expert engineering studies and analyses to make determinations about system relocations to make spectrum available, as well as to identify spectrum sharing opportunities.

5. Spectrum clearing, when feasible, is the priority action to make federally assigned spectrum available for commercial uses.

6. Spectrum sharing provides commercial access to federally assigned spectrum in circumstances in which clearing is not feasible.

7. The Institute for Telecommunication Sciences of the NTIA is the Federal Government’s premier expert laboratory for spectrum study activi-
ties, including spectrum interference studies, and all activities related to advancing next generation technologies.

(8) The Institute for Telecommunication Sciences is critical for undertaking engineering studies and analyses, identifying clearing or sharing opportunities, and performing tests that inform spectrum policy decisions to maximize the efficient use of spectrum resources.

SEC. 3. SPECTRUM MANAGEMENT IMPROVEMENTS.

(a) PROTOTYPING.—Consistent with subparagraphs (F), (L), (P), and (U) of section 103(b)(2) of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 902(b)(2)), the Assistant Secretary shall support the establishment, prototyping, and implementation of common models, common methodologies, and common inputs to inform electromagnetic spectrum management decisions, such as—

(1) technologies and techniques to control radio frequency emissions and interference;

(2) advanced antenna arrays, and artificial intelligence systems and technologies capable of operating advanced antenna arrays, including multiple-input, multiple-output antennas, beam forming and
steering technology, antenna nulling technology, and
conformal arrays;
(3) network sensing and monitoring technolo-
gies;
(4) advanced receivers that incorporate new
technologies supporting new waveforms and multiple
bands;
(5) dynamic spectrum access technologies
across wireless systems and frequencies, including
local-to-the-radio and cognitive multidomain access;
(6) novel spectrum access technologies;
(7) artificial intelligence systems to enable dy-
namic spectrum access, Internet of Things networks,
and other advanced communications technologies;
and
(8) optical and quantum communications tech-
nologies.
(b) SPECTRUM MANAGEMENT AND ADVANCED COM-
MUNICATIONS TECHNOLOGIES.—Section 104 of the Na-
tional Telecommunications and Information Administra-
tion Organization Act (47 U.S.C. 903) is amended by add-
ing at the end the following:
"(f) IDENTIFICATION AND IMPLEMENTATION OF
SPECTRUM MANAGEMENT TECHNOLOGIES.—The Assist-
Secretary shall identify and implement technologies that promote—

“(1) dynamic spectrum access;
“(2) network sensing and monitoring; and
“(3) optical and quantum communications.

“(g) PROTOTYPING OF ADVANCED COMMUNICATIONS TECHNOLOGIES.—The Assistant Secretary shall—

“(1) encourage the development of, and broad participation in, a skilled workforce to conduct prototyping of advanced communications technologies; and
“(2) support partnerships among institutions to develop a skilled workforce to conduct prototyping of advanced communications technologies.”.

(c) ASSISTANT SECRETARY DEFINED.—In this section, the term “Assistant Secretary” means the Assistant Secretary of Commerce for Communications and Information.