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117TH CONGRESS
1ST SESSION

H. R. 3784

To promote scientific research and development opportunities for connected technologies that advance precision agriculture capabilities.

IN THE HOUSE OF REPRESENTATIVES

JUNE 8, 2021

Mr. MCNERNEY (for himself and Mr. FEENSTRA) introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committee on Agriculture, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To promote scientific research and development opportunities for connected technologies that advance precision agriculture capabilities.

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

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Advancing IoT for Precision Agriculture Act of 2021''.

SEC. 2. PURPOSE.

It is the purpose of this Act to promote scientific research and development opportunities for connected technologies that advance precision agriculture capabilities.

SEC. 3. NATIONAL SCIENCE FOUNDATION DIRECTIVE ON AGRICULTURAL SENSOR RESEARCH.

In awarding grants under its sensor systems and networked systems programs, the Director of the National Science Foundation shall include in consideration of portfolio balance research and development on sensor connectivity in environments of intermittent connectivity and intermittent computation—

(1) to improve the reliable use of advance sensing systems in rural and agricultural areas; and

(2) that considers—

(A) direct gateway access for locally stored data;

(B) attenuation of signal transmission;

(C) loss of signal transmission; and

(D) at-scale performance for wireless power.

SEC. 4. UPDATING CONSIDERATIONS FOR PRECISION AGRICULTURE TECHNOLOGY WITHIN THE NSF ADVANCED TECHNICAL EDUCATION PROGRAM.

Section 3 of the Scientific and Advanced-Technology Act of 1992 (42 U.S.C. 1862i) is amended—

(1) in subsection (d)(2)—

(A) in subparagraph (D), by striking ''and'' after the semicolon;

(B) in subparagraph (E), by striking the period at the end and inserting ''; and''; and

(C) by adding at the end the following:

''(F) applications that incorporate distance learning tools and approaches.'';

(2) in subsection (e)(3)—

(A) in subparagraph (C), by striking ''and'' after the semicolon;

(B) in subparagraph (D), by striking the period at the end and inserting ''; and''; and

(C) by adding at the end the following:

''(E) applications that incorporate distance learning tools and approaches.''; and

(3) in subsection (j)(1), by inserting ''agricultural,'' after ''commercial,''.

SEC. 5. GAO REVIEW.

Not later than 18 months after the date of enactment of this Act, the Comptroller General of the United States shall provide—

(1) a technology assessment of precision agriculture technologies, such as the existing use of—

(A) sensors, scanners, radio-frequency identification, and related technologies that can monitor soil properties, irrigation conditions, and plant physiology;

(B) sensors, scanners, radio-frequency identification, and related technologies that can monitor livestock activity and health;

(C) network connectivity and wireless communications that can securely support digital agriculture technologies in rural and remote areas;

(D) aerial imagery generated by satellites or unmanned aerial vehicles;

(E) ground-based robotics;

(F) control systems design and connectivity, such as smart irrigation control systems; and

(G) data management software and advanced analytics that can assist decision making and improve agricultural outcomes; and

(2) a review of Federal programs that provide support for precision agriculture research, development, adoption, education, or training, in existence on the date of enactment of this Act.

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