

118TH CONGRESS  
1ST SESSION

# S. 734

To enhance the participation of precision agriculture in the United States,  
and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

MARCH 9, 2023

Mr. THUNE (for himself and Mr. WARNOCK) introduced the following bill;  
which was read twice and referred to the Committee on Agriculture, Nu-  
trition, and Forestry

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## A BILL

To enhance the participation of precision agriculture in the  
United States, and for other purposes.

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

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Promoting Precision  
5 Agriculture Act of 2023”.

6 **SEC. 2. DEFINITIONS.**

7 In this Act:

8 (1) 3GPP.—The term “3GPP” means the  
9 Third Generation Partnership Project.

1           (2) ADVANCED WIRELESS COMMUNICATIONS  
2           TECHNOLOGY.—The term “advanced wireless com-  
3           munications technology” means advanced technology  
4           that contributes to mobile (5G or beyond) networks,  
5           next-generation Wi-Fi networks, or other future net-  
6           works using other technologies, regardless of wheth-  
7           er the network is operating on an exclusive licensed,  
8           shared licensed, or unlicensed frequency band.

9           (3) ARTIFICIAL INTELLIGENCE.—The term “ar-  
10          tificial intelligence” has the meaning given the term  
11          in section 238(g) of the John S. McCain National  
12          Defense Authorization Act for Fiscal Year 2019  
13          (Public Law 115–232; 10 U.S.C. note prec. 4061).

14          (4) FOREIGN ADVERSARY.—The term “foreign  
15          adversary” means any foreign government or foreign  
16          nongovernment person engaged in a long-term pat-  
17          tern or serious instances of conduct significantly ad-  
18          verse to the national security of the United States,  
19          or security and safety of United States persons.

20          (5) PRECISION AGRICULTURE.—The term “pre-  
21          cision agriculture” means managing, tracking, or re-  
22          ducing crop or livestock production inputs, including  
23          seed, feed, fertilizer, chemicals, water, time, and  
24          such other inputs as the Secretary determines to be  
25          appropriate, at a heightened level of spatial and tem-

1 poral granularity to improve efficiencies, reduce  
2 waste, and maintain environmental quality.

3 (6) PRECISION AGRICULTURE EQUIPMENT.—

4 The term “precision agriculture equipment” means  
5 any equipment or technology that directly contrib-  
6 utes to a reduction in, or improved efficiency of, in-  
7 puts used in crop or livestock production, includ-  
8 ing—

9 (A) global positioning system-based or  
10 geospatial mapping;

11 (B) satellite or aerial imagery;

12 (C) yield monitors;

13 (D) soil mapping;

14 (E) sensors for gathering data on crop,  
15 soil, and livestock conditions;

16 (F) Internet of Things and technology that  
17 relies on edge and cloud computing;

18 (G) data management software and ad-  
19 vanced analytics;

20 (H) network connectivity products and so-  
21 lutions, including public and private wireless  
22 networks;

23 (I) global positioning system guidance,  
24 auto-steer systems, autonomous fleetings, and  
25 other machine-to-machine operations;

1           (J) variable rate technology for applying  
2 inputs, such as section control; and

3           (K) any other technology that leads to a  
4 reduction in, or improves efficiency of, crop and  
5 livestock production inputs, which may in-  
6 clude—

7                   (i) seed;

8                   (ii) feed;

9                   (iii) fertilizer;

10                   (iv) chemicals;

11                   (v) water;

12                   (vi) time;

13                   (vii) fuel;

14                   (viii) emissions; and

15                   (ix) such other inputs as the Sec-  
16 retary determines to be appropriate.

17           (7) SECRETARY.—The term “Secretary” means  
18 the Secretary of Agriculture.

19           (8) TRUSTED.—The term “trusted” means,  
20 with respect to a provider of advanced communica-  
21 tions service or a supplier of communications equip-  
22 ment or service, that the Secretary has determined  
23 that the provider or supplier is not owned by, con-  
24 trolled by, or subject to the influence of, a foreign  
25 adversary.

1           (9) VOLUNTARY CONSENSUS STANDARDS DE-  
2           VELOPMENT ORGANIZATION.—

3           (A) IN GENERAL.—The term “voluntary  
4           consensus standards development organization”  
5           means an organization that develops standards  
6           in a process that meets the principles for the  
7           development of voluntary consensus standards  
8           (as defined in the document of the Office of  
9           Management and Budget entitled “Federal Par-  
10          ticipation in the Development and Use of Vol-  
11          untary Consensus Standards and in Conformity  
12          Assessment Activities” (OMB Circular A–119)).

13          (B) INCLUSIONS.—The term “voluntary  
14          consensus standards development organization”  
15          includes the 3GPP, the Alliance for Tele-  
16          communications Industry Solutions, the Agri-  
17          cultural Industry Electronics Foundation, and  
18          the Global System for Mobile Communications  
19          Association.

20 **SEC. 3. PURPOSES.**

21          The purposes of this Act are—

22           (1) to enhance the participation of precision ag-  
23          riculture in the United States; and

1           (2) to promote United States leadership in vol-  
2           untary consensus standards development organiza-  
3           tions that set standards for precision agriculture.

4 **SEC. 4. INTERCONNECTIVITY STANDARDS FOR PRECISION**  
5           **AGRICULTURE.**

6           (a) IN GENERAL.—Not later than 2 years after the  
7           date of enactment of this Act, the Secretary, in consulta-  
8           tion with the Director of the National Institute of Stand-  
9           ards and Technology, shall—

10           (1) develop voluntary, consensus-based, private  
11           sector-led interconnectivity standards, guidelines,  
12           and best practices for precision agriculture that will  
13           promote economies of scale and ease the burden of  
14           the adoption of precision agriculture; and

15           (2) in carrying out paragraph (1)—

16           (A) coordinate with relevant public and  
17           trusted private sector stakeholders and other  
18           relevant industry organizations, including vol-  
19           untary consensus standards development orga-  
20           nizations; and

21           (B) consult with sector-specific agencies,  
22           other appropriate agencies, and State and local  
23           governments.

24           (b) CONSIDERATIONS.—The Secretary, in carrying  
25           out subsection (a), shall, in consultation with the Federal

1 Communications Commission and the Director of the Na-  
2 tional Institute of Standards and Technology, consider—

3 (1) the evolving demands of precision agri-  
4 culture;

5 (2) the connectivity needs of precision agri-  
6 culture equipment;

7 (3) the cybersecurity challenges facing precision  
8 agriculture, including cybersecurity threats for agri-  
9 culture producers and agriculture supply chains;

10 (4) the impact of advanced wireless communica-  
11 tions technology on precision agriculture; and

12 (5) the impact of artificial intelligence on preci-  
13 sion agriculture.

14 **SEC. 5. GAO ASSESSMENT OF PRECISION AGRICULTURE**  
15 **STANDARDS.**

16 (a) STUDY.—Not later than 1 year after the Sec-  
17 retary develops standards under section 4, and every 2  
18 years thereafter for the following 8 years, the Comptroller  
19 General of the United States shall conduct a study that  
20 assesses those standards, including the extent to which  
21 those standards, as applicable—

22 (1) are voluntary;

23 (2) were developed in coordination with relevant  
24 industry organizations, including voluntary con-  
25 sensus standards development organizations; and

1           (3) have successfully encouraged the adoption  
2           of precision agriculture.

3           (b) REPORT.—The Comptroller General of the  
4 United States shall submit to the Committee on Com-  
5 merce, Science, and Transportation of the Senate and the  
6 Committee on Science, Space, and Technology of the  
7 House of Representatives a report that summarizes the  
8 findings of each study conducted under subsection (a).

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