

115TH CONGRESS  
2D SESSION

# H. R. 6058

To direct the Secretary of Transportation to make grants for the establishment of pilot programs to advance high-definition road mapping in order to further the safe deployment of highly automated vehicles.

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## IN THE HOUSE OF REPRESENTATIVES

JUNE 8, 2018

Mr. LOEBSACK introduced the following bill; which was referred to the  
Committee on Transportation and Infrastructure

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## A BILL

To direct the Secretary of Transportation to make grants for the establishment of pilot programs to advance high-definition road mapping in order to further the safe deployment of highly automated vehicles.

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 “21st Century Auto-  
5        mated Vehicle Safety Act of 2018”.

1 **SEC. 2. GRANTS FOR ESTABLISHMENT OF HIGH-DEFINI-**  
2 **TION ROAD MAPPING PILOT PROGRAMS.**

3 (a) IN GENERAL.—The Secretary of Transportation  
4 shall make grants on a competitive basis to eligible entities  
5 for such entities to establish pilot programs to advance  
6 high-definition road mapping in order to further the safe  
7 deployment of highly automated vehicles.

8 (b) ELIGIBILITY.—The Secretary may only award a  
9 grant under this section to an eligible entity that—

10 (1) submits an application at such time, in such  
11 form, and with such information and assurances as  
12 the Secretary may require;

13 (2) has the ability to—

14 (A) integrate high-definition road mapping  
15 data into a human-in-the-loop, motion-based  
16 driving simulator that—

17 (i) has a 360-degree field of view;

18 (ii) has the ability to simultaneously  
19 perform sustained acceleration and braking  
20 combined with multiple lane changes to re-  
21 alistically recreate the experience of driving  
22 a vehicle; and

23 (iii) has interchangeable physical vehi-  
24 cle cabs to support testing with light and  
25 heavy vehicles;

1 (B) integrate high-definition road mapping  
2 data into highly automated vehicles operated on  
3 public roads or highways; and

4 (C) use a facility that has been designated  
5 as an Automated Vehicle Proving Ground by  
6 the Secretary; and

7 (3) has a demonstrated history of working with  
8 the Department of Transportation or a State depart-  
9 ment of transportation on high-definition road map-  
10 ping.

11 (c) USE OF FUNDS.—

12 (1) PILOT PROGRAM.—An eligible entity that is  
13 awarded a grant under this section shall use the  
14 grant funds to conduct a pilot program to carry out  
15 high-definition road mapping and to use such map-  
16 ping in the operation of highly automated vehicles in  
17 order to determine the challenges, barriers, and con-  
18 siderations that must be taken into account when  
19 planning for and deploying a nationwide high-defini-  
20 tion road mapping digital infrastructure that enables  
21 the safe operation of highly automated vehicles.

22 (2) REQUIREMENTS.—In conducting a pilot  
23 program under paragraph (1), an eligible entity  
24 shall—

1 (A) identify and evaluate minimum data  
2 quality standards and specifications for high-  
3 definition road mapping that are required to  
4 support the safe operation of highly automated  
5 vehicles, based on best practices from across the  
6 United States;

7 (B) conduct a feasibility analysis of the  
8 high-definition road mapping, and the use of  
9 such mapping in the operation of highly auto-  
10 mated vehicles, proposed to be carried out in  
11 the pilot program;

12 (C) conduct a simulation to ensure the safe  
13 operation of highly automated vehicles before  
14 operating any such vehicles on public roads or  
15 highways;

16 (D) ensure consideration of—

17 (i) the ability to perform accurate  
18 mapping in varied weather conditions; and

19 (ii) mapping of both rural and urban  
20 roadways and environments (including  
21 gravel roads); and

22 (E) prepare and submit to the Secretary  
23 the reports required by subsection (g)(1).

1           (3) OTHER PERMITTED USES OF FUNDS.—An  
2 eligible entity that is awarded a grant under this  
3 section may use grant funds—

4           (A) to contract, through a competitive se-  
5 lection process, for the carrying out of any ac-  
6 tivity for which grant funds are required or per-  
7 mitted to be used, including procuring services  
8 from or carrying out activities at a research  
9 center at an institution of higher education (as  
10 defined in sections 101 and 102 of the Higher  
11 Education Act of 1965 (20 U.S.C. 1001;  
12 1002)) that has experience with high-definition  
13 road mapping and highly automated vehicles ca-  
14 pable of ingesting high-definition road mapping  
15 data; and

16           (B) for international travel for purposes of  
17 exchanging information with other institutions  
18 involved in high-definition road mapping and  
19 highly automated vehicle research or operation.

20           (d) DURATION.—An eligible entity that is awarded  
21 a grant under this section shall complete all activities re-  
22 quired under the grant (except for preparation and sub-  
23 mission of the final report required by subsection  
24 (g)(1)(B)) not later than 3 years after the date on which  
25 such grant is awarded.

1 (e) NUMBER OF GRANTS.—The Secretary may not  
2 make—

3 (1) more than 3 grants under this section; or

4 (2) more than 1 grant under this section to the  
5 same eligible entity.

6 (f) GRANT AMOUNT.—The amount of each grant  
7 awarded under this section may not exceed \$10,000,000.

8 (g) REPORTS.—

9 (1) BY ELIGIBLE ENTITIES TO SECRETARY.—

10 (A) INTERIM REPORTS.—An eligible entity  
11 that is awarded a grant under this section shall  
12 submit to the Secretary, not later than 6  
13 months, 18 months, and 2 years after the date  
14 on which such grant is awarded, an interim re-  
15 port that contains a description of the activities  
16 carried out using grant funds.

17 (B) FINAL REPORT.—An eligible entity  
18 that is awarded a grant under this section shall  
19 submit to the Secretary, not later than 39  
20 months after the date on which such grant is  
21 awarded, a final report that contains a descrip-  
22 tion of—

23 (i) the activities carried out using  
24 grant funds;

1 (ii) the results of the pilot program  
2 conducted under subsection (c)(1), includ-  
3 ing the challenges, barriers, and consider-  
4 ations determined under such subsection;  
5 and

6 (iii) the minimum data quality stand-  
7 ards and specifications identified under  
8 subsection (c)(2)(A).

9 (2) BY SECRETARY TO CONGRESS.—Not later  
10 than 41 months after all grants under this section  
11 have been awarded, the Secretary shall submit to  
12 Congress a report on the activities carried out using  
13 grant funds under this section that summarizes the  
14 information in the reports submitted by eligible enti-  
15 ties under paragraph (1).

16 (h) DEFINITIONS.—

17 (1) IN GENERAL.—In this section:

18 (A) AUTOMATED DRIVING SYSTEM.—The  
19 term “automated driving system” means the  
20 hardware and software that are collectively ca-  
21 pable of performing the entire dynamic driving  
22 task on a sustained basis, regardless of whether  
23 such system is limited to a specific operational  
24 design domain.

1 (B) DYNAMIC DRIVING TASK.—The term  
2 “dynamic driving task” means all of the real  
3 time operational and tactical functions required  
4 to operate a vehicle in on-road traffic, excluding  
5 the strategic functions such as trip scheduling  
6 and selection of destinations and waypoints,  
7 and including—

8 (i) lateral vehicle motion control via  
9 steering;

10 (ii) longitudinal vehicle motion control  
11 via acceleration and deceleration;

12 (iii) monitoring the driving environ-  
13 ment via object and event detection, rec-  
14 ognition, classification, and response prep-  
15 aration;

16 (iv) object and event response execu-  
17 tion;

18 (v) maneuver planning; and

19 (vi) enhancing conspicuity via light-  
20 ing, signaling, and gesturing.

21 (C) ELIGIBLE ENTITY.—The term “eligible  
22 entity” means—

23 (i) a nonprofit organization;

24 (ii) a State or political subdivision of  
25 a State; and



1 (iii) an institution of higher education  
2 (as defined in sections 101 and 102 of the  
3 Higher Education Act of 1965 (20 U.S.C.  
4 1001; 1002)).

5 (D) HIGHLY AUTOMATED VEHICLE.—The  
6 term “highly automated vehicle”—

7 (i) means a motor vehicle equipped  
8 with an automated driving system; and

9 (ii) does not include a commercial  
10 motor vehicle (as defined in section 31101  
11 of title 49, United States Code).

12 (E) HIGH-DEFINITION.—The term “high-  
13 definition” means, with respect to road map-  
14 ping, that the mapping involves highly accurate  
15 data that enables a highly automated vehicle to  
16 accurately position and control itself in a lane.

17 (F) MOTOR VEHICLE.—The term “motor  
18 vehicle” has the meaning given such term in  
19 section 30102(a) of title 49, United States  
20 Code.

21 (G) NONPROFIT ORGANIZATION.—The  
22 term “nonprofit organization” means any cor-  
23 poration or association, however organized, no  
24 part of the net earnings of which inures to the  
25 benefit of any private shareholder or individual.

1 (H) OPERATIONAL DESIGN DOMAIN.—The  
2 term “operational design domain” means the  
3 specific conditions under which a given driving  
4 automation system or feature thereof is de-  
5 signed to function.

6 (I) SECRETARY.—The term “Secretary”  
7 means the Secretary of Transportation.

8 (J) STATE.—The term “State” means  
9 each of the several States, the District of Co-  
10 lumbia, each commonwealth, territory, or pos-  
11 session of the United States, and each federally  
12 recognized Indian Tribe.

13 (2) REVISIONS TO CERTAIN DEFINITIONS.—

14 (A) REVISIONS BY SAE INTERNATIONAL.—  
15 If SAE International (or its successor organiza-  
16 tion) revises the definition of any of the terms  
17 defined in subparagraph (A), (B), or (H) of  
18 paragraph (1) in Recommended Practice Report  
19 J3016, it shall notify the Secretary of the revi-  
20 sion. The Secretary shall publish a notice in the  
21 Federal Register to inform the public of the  
22 new definition unless, within 90 days after re-  
23 ceiving notice of the new definition and after  
24 opening a period for public comment on the  
25 new definition, the Secretary notifies SAE

1 International (or its successor organization)  
2 that the Secretary has determined that the new  
3 definition does not meet the need for motor ve-  
4 hicle safety, or is otherwise inconsistent with  
5 the purposes of chapter 301 of title 49, United  
6 States Code. If the Secretary so notifies SAE  
7 International (or its successor organization),  
8 the existing definition in paragraph (1) shall re-  
9 main in effect.

10 (B) CONFORMING AMENDMENTS.—If the  
11 Secretary does not reject a definition revised by  
12 SAE International (or its successor organiza-  
13 tion) as described in subparagraph (A), the  
14 Secretary shall promptly make any conforming  
15 amendments to the regulations and standards  
16 of the Secretary that are necessary. The revised  
17 definition shall apply for purposes of this sec-  
18 tion. The requirements of section 553 of title 5,  
19 United States Code, shall not apply to the mak-  
20 ing of any such conforming amendments.

21 (C) UPDATES BY SECRETARY.—Pursuant  
22 to section 553 of title 5, United States Code,  
23 the Secretary may update any of the definitions  
24 in subparagraph (A), (B), or (H) of paragraph  
25 (1) if the Secretary determines that materially

1           changed circumstances regarding highly auto-  
2           mated vehicles have impacted motor vehicle  
3           safety such that the definitions need to be up-  
4           dated to reflect such circumstances.

5           (i) AUTHORIZATION OF APPROPRIATIONS.—There  
6           are authorized to be appropriated to carry out this section  
7           \$31,500,000, of which not more than 5 percent shall be  
8           available for administrative costs, for fiscal year 2019.

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