

119TH CONGRESS
1ST SESSION

S. 1633

To require the Director of the National Institute of Standards and Technology to establish a pilot program that uses testbeds to develop measurement standards for the evaluation of artificial intelligence systems, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 7, 2025

Mr. LUJÁN (for himself, Mrs. BLACKBURN, Mr. DURBIN, Mr. RISCH, and Mr. WELCH) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To require the Director of the National Institute of Standards and Technology to establish a pilot program that uses testbeds to develop measurement standards for the evaluation of artificial intelligence systems, 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 “Testing and Evalua-
5 tion Systems for Trusted Artificial Intelligence Act of
6 2025” or the “TEST AI Act of 2025”.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) **ARTIFICIAL INTELLIGENCE SYSTEM.**—The
4 term “artificial intelligence system” has the meaning
5 given the term “artificial intelligence” in section
6 5002 of the National Artificial Intelligence Act of
7 2020 (15 U.S.C. 9401).

8 (2) **COVERED FOREIGN COUNTRY.**—The term
9 “covered foreign country” means—

- 10 (A) the People’s Republic of China;
11 (B) the Russian Federation;
12 (C) the Democratic People’s Republic of
13 Korea; and
14 (D) the Islamic Republic of Iran.

15 (3) **DIRECTOR.**—The term “Director” means
16 the Director of the National Institute of Standards
17 and Technology.

18 (4) **INSTITUTE.**—The term “Institute” means
19 the National Institute of Standards and Technology.

20 (5) **TESTBED.**—The term “testbed” means a
21 facility or mechanism equipped for conducting rig-
22 orous, transparent, and replicable testing of tools or
23 technologies to evaluate the functionality, perform-
24 ance, and security of those tools or technologies.

1 (6) WORKING GROUP.—The term “Working
2 Group” means the working group established under
3 section 3(c)(1).

4 **SEC. 3. PILOT PROGRAM ON TESTBEDS FOR DEVELOPMENT**
5 **OF MEASUREMENT STANDARDS FOR EVALUA-**
6 **TION OF ARTIFICIAL INTELLIGENCE SYS-**
7 **TEMS.**

8 (a) PILOT PROGRAM REQUIRED.—

9 (1) IN GENERAL.—The Director shall, in co-
10 ordination with the Secretary of Energy and after
11 consultation with the Working Group, carry out a
12 pilot program of testbeds to assess the feasibility
13 and advisability of developing measurement stand-
14 ards for the evaluation of artificial intelligence sys-
15 tems used by Federal agencies through the use of
16 testbeds.

17 (2) PROCESS.—The Director shall carry out the
18 pilot program required by paragraph (1) by building
19 and demonstrating an iterative process whereby
20 measurement science is advanced and standards are
21 developed using testbeds in accordance with sub-
22 section (d), and the results of the tests are reviewed
23 by stakeholders from government, the private sector,
24 and academia.

25 (b) MEMORANDUM OF UNDERSTANDING.—

1 (1) IN GENERAL.—Not later than 180 days
2 after the date of the enactment of this Act, the Sec-
3 retary of Commerce and the Secretary of Energy
4 shall enter into a memorandum of understanding to
5 implement the coordination between the Secretary of
6 Energy and the Director required by paragraph (2).

7 (2) REQUIREMENTS.—The memorandum shall
8 be sufficient to ensure the Institute and other Fed-
9 eral agencies have access, as may be necessary and
10 as determined by the Secretary of Energy, to the re-
11 sources, personnel, and facilities at the Department
12 of Energy, including the cross-cutting research and
13 development programs to support the activities of
14 the pilot program require by subsection (a)(1).

15 (3) RENEGOTIATIONS.—Not later than 2 years
16 after the establishment of the pilot program required
17 by subsection (a)(1), and every 2 years thereafter,
18 Secretary of Commerce and the Secretary of Energy
19 shall reassess the memorandum of understanding to
20 ensure that it meets the needs of the agencies and
21 adequately supports the activities of the pilot pro-
22 gram.

23 (c) ARTIFICIAL INTELLIGENCE TESTING WORKING
24 GROUP.—

25 (1) ESTABLISHMENT.—

1 (A) IN GENERAL.—Not later than 90 days
2 after the memorandum of understanding re-
3 quired by subsection (b)(1) is signed, the Sec-
4 retary of Commerce shall establish a working
5 group to provide advice to the Secretary of
6 Commerce and the Secretary of Energy on the
7 development of measurement standards for the
8 evaluation of artificial intelligence systems
9 under the pilot program required by subsection
10 (a).

11 (B) DESIGNATION.—The working group
12 established under subparagraph (A) shall be
13 known as the “Artificial Intelligence Testing
14 Working Group”.

15 (2) MEMBERSHIP.—

16 (A) IN GENERAL.—The Working Group
17 shall be comprised of not more than 10 mem-
18 bers that include the following:

19 (i) The Secretary of Commerce or a
20 designee of the Secretary of Commerce
21 from the Department of Commerce.

22 (ii) The Secretary of Energy or a des-
23 ignee of the Secretary of Energy from the
24 Department of Energy.

1 (iii) The Director or a designee of the
2 Director from the Institute.

3 (iv) Representatives from the private
4 sector, as the members described in clauses
5 (i) through (iii) consider appropriate.

6 (v) Representatives from academic in-
7 stitutions, as the members described in
8 clauses (i) through (iii) consider appro-
9 priate.

10 (B) PROHIBITION.—No citizen of a cov-
11 ered foreign country may serve as a member of
12 the Working Group.

13 (3) STRATEGY FOR MEASUREMENT STAND-
14 ARDS.—

15 (A) IN GENERAL.—Not later than 1 year
16 after the date on which the Working Group is
17 established under paragraph (1), the Working
18 Group shall develop a strategy for the develop-
19 ment of measurement standards for the evalua-
20 tion of artificial intelligence systems.

21 (B) ELEMENTS.—The strategy required by
22 subparagraph (A) shall—

23 (i) identify measurement standards
24 that the members of the Working Group
25 consider necessary, including standards

with respect to an artificial intelligence system for—

(I) reliability;

(II) performance;

(III) capability;

(IV) interpretability;

(V) security, including the propensity of the system for leaking data;

(VI) privacy;

(VII) data bias; and

(VIII) bounds for applicability and use cases;

(ii) include a proposed blueprint for developing the measurement standards;

(iii) identify the applications or artificial intelligence systems to which the standards should initially apply; and

(iv) identify metrics for the assessment of the pilot program.

(C) PUBLICATION.—The Secretary of Commerce shall publish on a publicly accessible website of the Department of Commerce the strategy for measurement standards required by subparagraph (A) to provide the information contained in the strategy to stakeholders, in-

1 including code and model developers, researchers,
2 and industrial users of artificial intelligence sys-
3 tems.

4 (d) DEVELOPMENT OF TESTBEDS FOR MEASURE-
5 MENT STANDARDS.—

6 (1) IN GENERAL.—Not later than 2 years after
7 the date of the enactment of this Act, the Director
8 shall, in collaboration with the Secretary of Energy
9 and in coordination with the Working Group, de-
10 velop, in accordance with the strategy developed
11 under subsection (c)(3)(A), testbeds on which to
12 demonstrate the development of measurement stand-
13 ards for the evaluation of artificial intelligence sys-
14 tems to be used by Federal agencies.

15 (2) EXPERTS.—In carrying out paragraph (1),
16 the Director may hire any expert the Director con-
17 siders necessary, including experts from academia,
18 industry, and standards development organizations.

19 (e) REPORT.—Not later than 180 days after the date
20 on which the Director completes the first testbed dem-
21 onstration and development of measurement standards
22 under subsection (d)(1), the Director shall submit to Con-
23 gress a report that—

1 (1) reviews the findings of the Director with re-
2 spect to the initial demonstration carried out under
3 this section;

4 (2) recommends revisions to the pilot program
5 plan, including by identifying any resources, fund-
6 ing, or personnel that is needed to improve and con-
7 tinue the development of testbeds and measurement
8 standards for the evaluation of artificial intelligence
9 systems for multiple applications; and

10 (3) makes recommendations for legislative or
11 administrative action to advance the development of
12 measurement standards for the evaluation of artifi-
13 cial intelligence systems.

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