118TH CONGRESS
2D SESSION

S. _____

To require systematic review of artificial intelligence systems before deployment by the Federal Government, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. WELCH (for himself and Mr. LUJÁN) introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To require systematic review of artificial intelligence systems before deployment by the Federal Government, 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 ''Trustworthy by Design

5   Artificial Intelligence Act of 2024'' or the ''TBD AI Act

6   of 2024''.

7   **SEC. 2. DEFINITIONS.**

8   In this Act:

9   (1) ARTIFICIAL INTELLIGENCE SYSTEM.—The

10   term ''artificial intelligence *system*'' means a ma-

1 chine-based system that can, for a given set of ma-

2 chine-defined or human-defined objectives, make or

3 inform predictions, recommendations, or decisions

4 influencing real or virtual environments. Artificial

5 intelligence systems use machine and human-based

6 inputs to—

7 (A) perceive real and virtual environments;

8 (B) abstract such perceptions into models

9 through analysis in an automated manner; and

10 (C) use model inference to formulate op-

11 tions for information or action.

12 (2) DIRECTOR.—The term "Director" means

13 the Director of the National Institute of Standards

14 and Technology.

15 (3) FEDERAL AGENCY.—The term "Federal

16 agency" means any Federal department, agency, or

17 organization.

18 SEC. 3. GUIDELINES FOR EVALUATION OF TRUST-

19 WORTHINESS OF ARTIFICIAL INTELLIGENCE

20 SYSTEMS.

21 (a) DEVELOPMENT REQUIRED.—

22 (1) IN GENERAL.—Not later than 1 year after

23 the date of the enactment of this Act, the Director

24 shall develop and release a set of guidelines for eval-

1   uation of the trustworthiness of artificial intelligence

2   systems.

3   (2) USE OF EXISTING GUIDELINES OR ELE-

4   MENTS.—

5   (A) IN GENERAL.—In carrying out para-

6   graph (1), the Director may use existing guide-

7   lines, best practices, or elements of guidelines

8   or best practices that the Director identifies

9   from other sources.

10   (B) ANNOTATION.—If the Director uses

11   guidelines, best practices, or elements of guide-

12   lines or best practices pursuant to subpara-

13   graph (A) of this paragraph in order to carry

14   out paragraph (1), the Director shall clearly an-

15   notate such use in a central location and make

16   such annotations available online to the public.

17   (3) PERIODIC UPDATES.—The Director shall,

18   on a periodic basis but not less frequently than an-

19   nually, update the guidelines developed pursuant to

20   paragraph (1).

21   (b) COMPONENTS COVERED.—The guidelines devel-

22   oped pursuant to subsection (a) for evaluation of artificial

23   intelligence systems shall cover the following:

24   (1) The models used for the artificial intel-

25   ligence systems.

1   (2) The data used and activities conducted in
2   training the artificial intelligence systems, including
3   the collection and filtering of data.

4   (3) The processes and techniques applied after
5   initial training to enhance the capabilities of the ar-
6   tificial intelligence systems, such as fine-tuning, re-
7   inforcement learning, and other post-training optimi-
8   zation methods.

9   (4) Content generated by the artificial intel-
10   ligence systems.

11   (5) The hardware systems used by the artificial
12   intelligence systems.

13   (6) Interactions between humans and the artifi-
14   cial intelligence systems that are expected to arise
15   during intended or reasonably foreseeable use of the
16   artificial intelligence systems.

17   (7) Risks presented by anthropomorphic artifi-
18   cial intelligence systems.

19   (c) ELEMENTS OF TRUSTWORTHINESS.—

20   (1) IN GENERAL.—The guidelines developed
21   pursuant to subsection (a) shall cover trust-
22   worthiness with respect to the following:

23   (A) Validity and reliability.

24   (B) Safety.

25   (C) Security.

1   (D) Resiliency.

2   (E) Transparency and accountability.

3   (F) Explainability and interpretability.

4   (G) Privacy.

5   (H) Fairness and bias.

6   (I) Such other matters relating to safety,

7   security, or trustworthiness as the Director con-

8   siders appropriate.

9   (2) PROTECTED CLASSES.—The guidelines de-

10   veloped pursuant to subsection (a) shall specifically

11   highlight and consider accuracy and bias risks relat-

12   ing to protected classes under Federal law.

13   (d) APPLICABILITY.—The Director shall ensure that

14   the guidelines developed pursuant to subsection (a) are de-

15   veloped so that they include an assessment of the trust-

16   worthiness of all components covered under subsection (b)

17   with regards to all elements under subsection (c), but ac-

18   count for circumstances in which certain assessment meth-

19   ods or recommendations may not be applicable to certain

20   components or elements may not be applicable.

21   (e) LIMITATION RELATING TO SYNTHETIC CON-

22   TENT.—Under the guidelines developed pursuant to sub-

23   section (a), the Director shall identify appropriate mecha-

24   nisms to manage the risks from relying on synthetic con-

25   tent or content created by artificial intelligence systems

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1 to improve a dataset or model, or to meet evaluation

2 guidelines.

3   (f) DEVELOPING ROBUST GUIDELINES.—The Direc-

4 tor shall ensure that the guidelines developed pursuant to

5 subsection (a) are developed in such a manner that en-

6 courages transparency, cooperation, and collaboration

7 with developers or evaluators of artificial intelligence sys-

8 tems, academia, and civil society sufficient to independ-

9 ently verify the elements set forth under subsection (c)(1).

10   (g) ITERATIVE EVALUATION.—The Director shall en-

11 sure that the guidelines developed pursuant to subsection

12 (a) cover how best to evaluate the trustworthiness of artifi-

13 cial intelligence systems iteratively, throughout the design,

14 development, and deployment lifecycle of an artificial intel-

15 ligence system.

16   (h) REPORT TO CONGRESS.—

17   (1) IN GENERAL.—The Director shall submit to

18   Congress a report on any expected barriers to imple-

19   menting and adhering to the guidelines developed

20   pursuant to subsection (a), especially with respect to

21   transparency, cooperation, or collaboration barriers

22   with developers of artificial intelligence systems.

23   (2) FORM.—The report under paragraph (1)

24   shall be submitted in unclassified form, but may in-

25   clude a classified appendix, if necessary.

1 **SEC. 4. FEDERAL DEPLOYMENT OF ARTIFICIAL INTEL-**

2   **LIGENCE SYSTEMS.**

3   (a) COVERED USE DEFINED.—In this section, with

4 respect to an artificial intelligence system, the term "cov-

5 ered use"—

6   (1) means use in any automated decision mak-

7   ing; and

8   (2) does not include any use that the Director

9   exempts from any portion of the guidelines issued

10   under section 3(a), including any use that—

11   (A) is subject to evaluation by existing na-

12   tional security assessments; or

13   (B) is an edge case, especially a time sen-

14   sitive or emergency case, as determined by the

15   Director.

16   (b) EXISTING ARTIFICIAL INTELLIGENCE SYS-

17 TEMS.—With respect to any artificial intelligence system

18 deployed for a covered use that is in use by a Federal

19 agency before the date of enactment of this Act, the Fed-

20 eral agency shall evaluate the artificial intelligence system

21 deployment to ensure the artificial intelligence system

22 meets the guidelines developed under section 3(a) not later

23 than 2 years after the effective date of this section or cease

24 using the artificial intelligence system.

25   (c) NEW ARTIFICIAL INTELLIGENCE SYSTEMS.—The

26 head of each Federal agency shall ensure that each new

1 acquisition or integration of an artificial intelligence sys-

2 tem by the Federal agency for a covered use meets the

3 guidelines developed under section 3(a) prior to deploy-

4 ment of the artificial intelligence system.

5   (d) LABELING.—

6   (1) IN GENERAL.—The head of each Federal

7   agency shall identify as compliant, and make pub-

8   licly available, in accordance with all applicable clas-

9   sification requirements and national security restric-

10   tions, the documentation of evaluation status and

11   compliance details for, each artificial intelligence

12   system deployment for a covered use by the Federal

13   agency that meets the guidelines developed under

14   section 3(a).

15   (2) NONCOMPLIANT DEPLOYMENTS.—Not later

16   than 2 years after the effective date of this section,

17   the head of each Federal agency that deploys an ar-

18   tificial intelligence system that is not compliant or is

19   not evaluated pursuant to paragraph (1), shall—

20   (A) make publicly available documentation

21   of each such deployment; and

22   (B) with respect to each such deployment,

23   report—

24   (i) the status of the evaluation;

1   (ii) progress made towards compli-

2   ance;

3   (iii) a clear, specific justification for

4   any delay; and

5   (iv) any barriers to compliance, in-

6   cluding resource constraints.

7   (3) REPORT TO CONGRESS.—

8   (A) IN GENERAL.—Not later than 3 years

9   after the effective date of this section, the head

10   of each Federal agency shall submit to Con-

11   gress a report of each deployment described in

12   paragraph (2).

13   (B) FORM.—The report under subpara-

14   graph (A) shall be submitted in unclassified

15   form, but may include a classified appendix, if

16   necessary.

17   (e) CHIEF AI OFFICERS.—

18   (1) IN GENERAL.—Not later than 120 days

19   after the effective date of this section, the head of

20   each Federal agency shall designate a Chief Artifi-

21   cial Intelligence Officer, with responsibility for the

22   management, governance, acquisition, and oversight

23   processes of the Federal agency relating to artificial

24   intelligence, including implementation of the guide-

25   lines developed under section 3(a).

1   (2) FULL-TIME EMPLOYEE.—To the extent

2   practicable, each Chief Artificial Intelligence Officer

3   designated under paragraph (1) shall be a full-time

4   employee of the Federal agency on the date of the

5   designation.

6   (3) SENIORITY.—With respect to the Chief Ar-

7   tificial Intelligence Officer of any agency described

8   in section 901(b) of title 31, United States Code, the

9   Chief Artificial Intelligence Officer shall be an exec-

10   utive with a position classified above GS–15 of the

11   General Schedule or the equivalent.

12   (f) EFFECTIVE DATE.—This section shall take effect

13 on the date that the guidelines developed pursuant to sec-

14 tion 3(a) are released.