

119TH CONGRESS
2D SESSION

S. 5047

To require the Director of the National Institute of Standards and Technology to establish a working group to facilitate coordination among relevant stakeholders regarding compound risks relating to artificial intelligence physical systems, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 21, 2026

Mr. SHEEHY (for himself and Mr. KIM) 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 working group to facilitate coordination among relevant stakeholders regarding compound risks relating to artificial intelligence physical 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 “Artificial Intelligence
5 Physical Systems Coordination Act of 2026”.

1 **SEC. 2. NATIONAL INSTITUTE OF STANDARDS AND TECH-**
2 **NOLOGY WORKING GROUP ON COMPOUND**
3 **RISKS RELATING TO ARTIFICIAL INTEL-**
4 **LIGENCE PHYSICAL SYSTEMS.**

5 (a) ESTABLISHMENT.—The Director of the National
6 Institute of Standards and Technology (in this section re-
7 ferred to as the “Director”) shall establish a working
8 group (in this section referred to as the “Working
9 Group”) to facilitate coordination among relevant stake-
10 holders regarding effects on the risk landscape arising
11 from concurrent advances in—

- 12 (1) artificial intelligence technologies;
13 (2) sensor technologies that enable perception
14 and data collection;
15 (3) actuator or robotic technologies that enable
16 autonomous physical action; and
17 (4) modeling, simulation, and digital twin tech-
18 nologies that enable the testing, validation, and opti-
19 mization of artificial intelligence-enabled physical
20 systems.

21 (b) MEMBERSHIP.—The Working Group shall include
22 not fewer than 12 and not more than 20 members, ap-
23 pointed by the Director from among the following:

- 24 (1) Industries, including at least 2 from each of
25 the following, but not more than 6 from any of the
26 following:

1 (A) Developers of artificial intelligence sys-
2 tems.

3 (B) Deployers of artificial intelligence sys-
4 tems.

5 (C) Developers of sensor, robotic, and ac-
6 tuator technologies.

7 (D) Manufacturers of sensor, robotic, and
8 actuator technologies.

9 (E) Automation and manufacturing tech-
10 nology providers that integrate artificial intel-
11 ligence and robotics.

12 (2) Faculty of accredited institutions of higher
13 education, as well as representatives of independent
14 research organizations with expertise in artificial in-
15 telligence, robotics, physical systems safety, cyberse-
16 curity, or security evaluation.

17 (3) Civil society organizations with dem-
18 onstrated technical or public-interest expertise rel-
19 evant to artificial intelligence, robotics, cybersecu-
20 rity, or physical systems safety.

21 (4) Such other stakeholders with demonstrated
22 subject-matter expertise relevant to the duties of the
23 Working Group, including stakeholders in cybersecu-
24 rity or critical infrastructure security, as the Direc-
25 tor considers relevant.

1 (c) TERMS.—

2 (1) APPOINTMENT.—Members of the Working
3 Group shall be appointed by the Director for terms
4 of not more than 2 years.

5 (2) REAPPOINTMENT.—A member may be re-
6 appointed at the discretion of the Director.

7 (3) VACANCIES.—Any vacancy in the Working
8 Group shall not affect its powers and shall be filled
9 in the same manner as the original working group.

10 (d) DUTIES.—The Working Group shall—

11 (1) identify and describe, using publicly avail-
12 able information to the extent practicable, plausible
13 pathways by which the advances described in sub-
14 section (a) may introduce, alter, reduce, or intensify
15 particular classes of physical systems safety or secu-
16 rity concerns, including risks that may arise from
17 the combination of model capability and the avail-
18 ability, affordability, and accessibility of relevant
19 sensors and actuators;

20 (2) engage in technical discussions and research
21 for the development of best practices and rec-
22 ommendations regarding whether, and under what
23 conditions, analytical tools, benchmarks, or guide-
24 lines would be useful for assessing such physical
25 safety and security concerns, including—

1 (A) approaches for collecting, synthesizing,
2 and presenting publicly available trend data re-
3 lating to the factors described in paragraphs
4 (1) through (3) of subsection (a);

5 (B) potential evaluation methods or bench-
6 mark concepts for characterizing safety- and se-
7 curity-related behaviors, emergent behaviors,
8 operational characteristics, and implications
9 and risks for systems at the interface of soft-
10 ware models and physical sensors or actuators;
11 and

12 (C) potential indicators of evolving physical
13 safety and security concerns that may warrant
14 heightened attention by policymakers, devel-
15 opers, or deployers;

16 (3) identify voluntary best practices, where ap-
17 propriate, to support the responsible development
18 and deployment of artificial intelligence physical sys-
19 tems, including best practices relating to human-ma-
20 chine collaboration in operational environments, and
21 in a manner that supports the identification, assess-
22 ment, or mitigation of the safety and security con-
23 cerns identified in paragraph (1); and

24 (4) identify opportunities to align the work of
25 the Working Group with existing voluntary stand-

1 ards development activities of the National Institute
2 of Standards and Technology.

3 (e) NATURE OF ACTIVITIES.—Activities under this
4 section—

5 (1) shall be carried out in a transparent, con-
6 sultative, and nonregulatory manner consistent with
7 the mission of the National Institute of Standards
8 and Technology to advance innovation and industrial
9 competitiveness;

10 (2) shall not require the disclosure of propri-
11 etary information, trade secrets, or classified infor-
12 mation; and

13 (3) shall impose no new regulatory obligations
14 on private entities.

15 (f) OUTPUTS.—

16 (1) INITIAL REPORT.—Not later than 540 days
17 after the date of the enactment of this Act, the Di-
18 rector shall publish a report summarizing the activi-
19 ties of the Working Group and any recommendations
20 developed under subsection (c), including rec-
21 ommendations, if any, regarding the development of
22 analytical tools, benchmarks, or guidelines described
23 in subsection (c)(2).

24 (2) UPDATES.—Not less frequently than once
25 every 2 years after publication of the initial report

1 under paragraph (1), the Director may publish an
2 updated report reflecting new stakeholder input,
3 emerging research, and developments relevant to the
4 concurrent advances described in subsection (a).

5 (3) PUBLIC AVAILABILITY.—Each report pub-
6 lished under this subsection shall be made publicly
7 available in written and digital formats and may in-
8 clude data visualizations or other resources useful to
9 policymakers, researchers, and industry participants.

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