



116TH CONGRESS
2D SESSION

S. _____

To accelerate the application of artificial intelligence in the Department of Defense and to strengthen the workforce that pertains to artificial intelligence, and for other purposes.

IN THE SENATE OF THE UNITED STATES

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

A BILL

To accelerate the application of artificial intelligence in the Department of Defense and to strengthen the workforce that pertains to artificial intelligence, 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; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Artificial Intelligence for the Armed Forces Act of
6 2020”.

7 (b) TABLE OF CONTENTS.—The table of contents for
8 this Act is as follows:

Sec. 1. Short title; table of contents.

**TITLE I—DEPARTMENT OF DEFENSE ARTIFICIAL INTELLIGENCE
LEADERSHIP**

Sec. 101. Organizational placement of Director of the Joint Artificial Intelligence Center.

Sec. 102. Grade of Director of the Joint Artificial Intelligence Center.

**TITLE II—STRENGTHENING THE DEPARTMENT OF DEFENSE
ARTIFICIAL INTELLIGENCE WORKFORCE**

Sec. 201. Increasing human resource team literacy in artificial intelligence.

Sec. 202. Guidance and direction on use of direct hiring processes for artificial intelligence professionals and other data science and software development personnel.

Sec. 203. Waiver of qualification standards for General Schedule positions in artificial intelligence.

Sec. 204. Modifying the Armed Services Vocational Aptitude Battery Test to address computational thinking.

**1 TITLE I—DEPARTMENT OF DE-
2 FENSE ARTIFICIAL INTEL-
3 LIGENCE LEADERSHIP**

**4 SEC. 101. ORGANIZATIONAL PLACEMENT OF DIRECTOR OF
5 THE JOINT ARTIFICIAL INTELLIGENCE CEN-
6 TER.**

7 (a) AUTHORITY.—

8 (1) IN GENERAL.—The Secretary of Defense
9 shall exercise authority and direction over the Joint
10 Artificial Intelligence Center.

11 (2) LIMITATION ON DELEGATION.—The author-
12 ity of the Secretary under this section may not be
13 delegated below the level of the Deputy Secretary of
14 Defense.

15 (b) DIRECT REPORTING TO SECRETARY OF DE-
16 FENSE.—The Director of the Joint Artificial Intelligence

1 Center shall report directly to the Secretary or the Deputy
2 Secretary on matters relating to artificial intelligence pol-
3 icy, priorities, practices, and resourcing.

4 **SEC. 102. GRADE OF DIRECTOR OF THE JOINT ARTIFICIAL**
5 **INTELLIGENCE CENTER.**

6 An officer appointed to serve as Director of the Joint
7 Artificial Intelligence Center shall, while so serving, have
8 the grade of lieutenant general in the Army, Air Force,
9 or Marine Corps or vice admiral in the Navy.

10 **TITLE II—STRENGTHENING THE**
11 **DEPARTMENT OF DEFENSE**
12 **ARTIFICIAL INTELLIGENCE**
13 **WORKFORCE**

14 **SEC. 201. INCREASING HUMAN RESOURCE TEAM LITERACY**
15 **IN ARTIFICIAL INTELLIGENCE.**

16 (a) DEPARTMENT OF DEFENSE.—

17 (1) TRAINING AND CERTIFICATION PROGRAM
18 REQUIRED.—Not later than one year after the date
19 of the enactment of this Act, the Secretary of De-
20 fense shall develop a training and certification pro-
21 gram on software development, data science, and ar-
22 tificial intelligence that is tailored to the needs of
23 the covered human resources workforce.

24 (2) REQUIREMENTS.—The course required by
25 paragraph (1) shall—

1 (A) provide a generalist's introduction to
2 software development and business processes,
3 data management practices relating to machine
4 learning, deep learning, artificial intelligence,
5 and artificial intelligence workforce roles; and

6 (B) address hiring options and processes
7 available for software developers, data sci-
8 entists, and artificial intelligence professionals,
9 including direct hiring authorities, excepted
10 service authorities, the Intergovernmental Per-
11 sonnel Act of 1970 (42 U.S.C. 4701 et seq.),
12 and authorities for hiring special government
13 employees and highly qualified experts.

14 (3) OBJECTIVE.—It shall be the objective of the
15 Department of Defense to provide the training
16 course developed pursuant to paragraph (1) to the
17 covered human resources workforce in such a man-
18 ner that—

19 (A) in the first year, 20 percent of the
20 workforce is certified as having successfully
21 completed the course; and

22 (B) in each year thereafter, an additional
23 10 percent of the workforce is certified, until
24 the Department achieves and maintains a sta-

1 tus in which 80 percent of the covered human
2 resources workforce is so certified.

3 (b) OTHER NATIONAL SECURITY AGENCIES.—The
4 Secretary of Defense shall work with the Attorney Gen-
5 eral, the Secretary of Homeland Security, the Director of
6 National Intelligence, or the head of any element of the
7 intelligence community to offer the training and certifi-
8 cation program developed pursuant to subsection (a) to
9 employees of other national security agencies and to en-
10 courage the heads of such agencies to achieve a level of
11 certification comparable to the objectives established for
12 the Department of Defense.

13 (c) DEFINITIONS.—In this section:

14 (1) The term “covered human resources work-
15 force” means human resources professionals, hiring
16 managers, and recruiters who are or will be respon-
17 sible for hiring software developers, data scientists,
18 or artificial intelligence professionals.

19 (2) The term “intelligence community” has the
20 meaning given such term in section 3 of the Na-
21 tional Security Act of 1947 (50 U.S.C. 3003).

22 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
23 authorized to be appropriated to the Secretary of Defense
24 to carry out subsection (a) \$2,500,000 for fiscal year
25 2021.

1 **SEC. 202. GUIDANCE AND DIRECTION ON USE OF DIRECT**
2 **HIRING PROCESSES FOR ARTIFICIAL INTEL-**
3 **LIGENCE PROFESSIONALS AND OTHER DATA**
4 **SCIENCE AND SOFTWARE DEVELOPMENT**
5 **PERSONNEL.**

6 (a) **GUIDANCE REQUIRED.**—Not later than 180 days
7 after the date of the enactment of this Act, the Secretary
8 of Defense shall issue guidance to the secretaries of the
9 military departments and the heads of the defense compo-
10 nents on improved use of the direct hiring processes for
11 artificial intelligence professionals and other data science
12 and software development personnel.

13 (b) **OBJECTIVE.**—The objective of the guidance re-
14 quired by subsection (a) shall be to ensure that organiza-
15 tional leaders assume greater responsibility for the results
16 of civilian hiring of artificial intelligence professionals and
17 other data science and software development personnel.

18 (c) **CONTENTS OF GUIDANCE.**—At a minimum, the
19 guidance required by subsection (a) shall—

20 (1) instruct human resources professionals and
21 hiring authorities to utilize direct hiring authorities
22 (including excepted service authorities) for the hiring
23 of artificial intelligence professionals and other data
24 science and software development personnel, to the
25 maximum extent practicable;

1 (2) instruct hiring authorities, when using di-
2 rect hiring authorities, to prioritize utilization of
3 panels of subject matter experts over human re-
4 sources professionals to assess applicant qualifica-
5 tions and determine which applicants are best quali-
6 fied for a position;

7 (3) authorize and encourage the use of
8 ePortfolio reviews to provide insight into the pre-
9 vious work of applicants as a tangible demonstration
10 of capabilities and contribute to the assessment of
11 applicant qualifications by subject matter experts;

12 (4) authorize the secretaries of the military de-
13 partments and the heads of the defense components
14 to waive qualification standards for General Sched-
15 ule positions established by the Office of Personnel
16 Management that would unnecessarily restrict the
17 judgment of the subject matter experts as to the
18 best qualified applicants, to the extent permitted by
19 law; and

20 (5) authorize and encourage the use of referral
21 bonuses for recruitment and hiring of highly quali-
22 fied artificial intelligence professionals and other
23 data science and software development personnel in
24 accordance with volume 451 of Department of De-
25 fense Instruction 1400.25, or successor instruction.

1 (d) REPORT.—

2 (1) IN GENERAL.—Not later than one year
3 after the date on which the guidance is issued under
4 subsection (a), the Secretary shall submit to the con-
5 gressional defense committees a report on the guid-
6 ance issued pursuant to subsection (a).

7 (2) CONTENTS.—At a minimum, the report
8 submitted under paragraph (1) shall address—

9 (A) the objectives of the guidance and the
10 manner in which the guidance seeks to achieve
11 those objectives; and

12 (B) the effect of the guidance on the hiring
13 process for artificial intelligence professionals
14 and other data science and software develop-
15 ment personnel, including the effect on—

16 (i) hiring time;

17 (ii) the use of direct hiring authority;

18 (iii) the use of subject matter experts;

19 and

20 (iv) the quality of new hires, as as-
21 sessed by hiring managers and organiza-
22 tional leaders.

1 **SEC. 203. WAIVER OF QUALIFICATION STANDARDS FOR**
2 **GENERAL SCHEDULE POSITIONS IN ARTIFI-**
3 **CIAL INTELLIGENCE.**

4 (a) DEPARTMENT OF DEFENSE.—Notwithstanding
5 any other provision of law, an officer with a grade of major
6 general or greater in the Army, Air Force, or Marine
7 Corps or rear admiral or greater in the Navy and a civilian
8 employed by the Department of Defense in a position of
9 equivalent authority may waive any General Schedule
10 qualification standard established by the Director of the
11 Office of Personnel Management in the case of any appli-
12 cant for a position in artificial intelligence in the Depart-
13 ment of Defense who is determined by a hiring manager,
14 in consultation with subject matter experts, to be the best
15 qualified candidate for the position.

16 (b) OTHER NATIONAL SECURITY AGENCIES.—

17 (1) IN GENERAL.—The Director of the Office of
18 Personnel Management shall establish a process by
19 which the Attorney General, the Secretary of Home-
20 land Security, the Secretary of State, the Secretary
21 of Commerce, the Director of National Intelligence,
22 and the head of any element of the intelligence com-
23 munity (as defined in section 3 of the National Se-
24 curity Act of 1947 (50 U.S.C. 3003)) may request
25 an exception to any General Schedule qualification
26 standard in any case in which the agency head de-

1 termines that national security needs would best be
2 met by hiring managers making an independent
3 judgment about qualifications and pay grades for a
4 position in artificial intelligence with the advice of
5 subject matter experts.

6 (2) SCOPE.—The process required by para-
7 graph (1) shall provide for requests to be made for
8 individual billets, for position descriptions, or for
9 categories of individual billets or position descrip-
10 tions at the discretion of the agency head.

11 (3) LIMITATION.—The authority under this
12 subsection may be used for the hiring of not more
13 than 100 individuals.

14 **SEC. 204. MODIFYING THE ARMED SERVICES VOCATIONAL**
15 **APTITUDE BATTERY TEST TO ADDRESS COM-**
16 **PUTATIONAL THINKING.**

17 (a) IN GENERAL.—Not later than one year after the
18 date of the enactment of this Act, the Secretary of Defense
19 shall modify the Armed Services Vocational Aptitude Bat-
20 tery test to add a new subtest addressing computational
21 thinking skills relevant to military applications, including
22 problem decomposition, abstraction, pattern recognition,
23 analytical ability, the identification of variables involved
24 in data representation, and the ability to create algorithms
25 and solution expressions.

1 (b) USE.—The Secretary shall use the results of the
2 subtest added under subsection (a) in the same manner
3 as the results of existing subtests to place personnel in
4 career fields and to identify candidates for further train-
5 ing.