

118TH CONGRESS
1ST SESSION

S. 1123

To ensure computer programming, coding, and artificial intelligence capabilities in the Armed Forces, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 30, 2023

Ms. DUCKWORTH introduced the following bill; which was read twice and referred to the Committee on Armed Services

A BILL

To ensure computer programming, coding, and artificial intelligence capabilities in the Armed Forces, 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 “Managing Active and
5 Reserve Tech Talent Effectively Act of 2023” or the
6 “MARTTE Act of 2023”.

7 **SEC. 2. DEFINITIONS.**

8 In this Act:

9 (1) **COMPUTER PROGRAMMING OCCUPATIONAL**
10 **AREA.**—The term “computer programming occupa-

1 tional area” means a technical or nontechnical occu-
 2 pational position that supports computer program-
 3 ming, coding, and artificial intelligence operations
 4 and development, including the following positions:

5 (A) Data scientists.

6 (B) Data engineers.

7 (C) Data analysts.

8 (D) Software developers.

9 (E) Machine learning engineers.

10 (F) Program managers.

11 (G) Acquisition professionals.

12 (2) DIGITAL PLATFORM OR APPLICATION.—The
 13 term “digital platform or application” means an on-
 14 line integrated personnel management system or
 15 human capital solution.

16 (3) HUMAN CAPITAL INFRASTRUCTURE.—The
 17 term “human capital infrastructure” means the poli-
 18 cies and processes that support development, train-
 19 ing, evaluating, and tracking of personnel with spe-
 20 cific occupational skills, experiences, and positions,
 21 including—

22 (A) career and talent management strategy

23 and policies; and

1 (B) personnel software and databases for
2 tracking and identifying members of the Armed
3 Forces with specific capabilities.

4 (4) QUALIFICATION PROCESS.—The term
5 “qualification process”—

6 (A) means the process, modeled on a
7 streamlined version of the process for obtaining
8 joint qualifications, for training and verifying
9 members of the Armed Forces to receive career
10 field or occupational codes associated with com-
11 puter programming occupational areas; and

12 (B) may include—

13 (i) experiences, education, and train-
14 ing received as a part of military service,
15 including fellowships, talent exchanges, po-
16 sitions within government, and educational
17 courses; and

18 (ii) in the case of members of the re-
19 serve components, experiences, education,
20 and training received in their civilian occu-
21 pations.

22 (5) QUALIFIED AND KNOWN STANDARD.—The
23 term “qualified and known standard” means the de-
24 fined, reviewed, and published standard for occupa-
25 tional series or career fields that provides a measur-

1 able standard by which the military departments and
2 combatant commands can assess the ability to meet
3 their operational planning and steady-state force
4 presentation requirements during the global force
5 management process.

6 **SEC. 3. INFRASTRUCTURE FOR COMPUTER PROGRAMMING**

7 **SKILLS.**

8 (a) FINDINGS.—Congress makes the following find-
9 ings:

10 (1) To ensure a competitive edge over adver-
11 saries of the United States, the United States
12 Armed Forces must attract, build, and maintain a
13 military force capable of rapidly bringing advanced
14 technology and innovation to the battlefields.

15 (2) Congress has supported the Department of
16 Defense across various programs to attract talent in
17 key computer programming occupational areas.

18 (3) The Department of Defense and the mili-
19 tary departments have issued multiple strategy docu-
20 ments regarding workforce development for artificial
21 intelligence, but have yet, as of the date of the en-
22 actment of this Act, to establish policies for military
23 occupational specialties or career field development.

24 (4) Absent strategy implementation and invest-
25 ment, the Department of Defense and each of the

1 military departments currently lack the human cap-
2 ital infrastructure to quickly leverage critical capa-
3 bilities relating to computer programming main-
4 tained by members of the Armed Forces in conflict.
5 It is imperative to build out such an infrastructure
6 to leverage such capabilities.

7 (5) While the Department of Defense has estab-
8 lished new work roles related to computer program-
9 ming, artificial intelligence and machine learning
10 competency, and software engineering under the De-
11 partment of Defense Cyber Workforce Framework,
12 there is no requirement for the military departments
13 to review, modify, and expand their occupational
14 fields, military occupational specialties, and skills
15 designators to align with these work roles. Addition-
16 ally, there is no unified mechanism to evaluate the
17 utility of capabilities of members of the Armed
18 Forces in computer programming occupational areas
19 and to identify gaps or surpluses in such capabilities
20 across the military departments.

21 (b) POLICY.—

22 (1) IN GENERAL.—It shall be a policy of the
23 Armed Forces to establish a robust human capital
24 infrastructure that allows for the military depart-
25 ments to present a qualified and known standard to

1 the combatant commands with respect to computer
2 programming skills, which include technical and
3 nontechnical skills related to artificial intelligence
4 and coding.

5 (2) ELEMENTS.—The policy set forth in para-
6 graph (1) shall be achieved by—

7 (A) the development, funding, and execu-
8 tion of a coherent approach and transparent
9 strategy across digital platforms and applica-
10 tions that enable development and presentation
11 of forces with appropriate programmatic over-
12 sight;

13 (B) the development and management of
14 career field occupational codes aligned with the
15 work roles related to computer programming,
16 artificial intelligence and machine learning com-
17 petency, and software engineering under the
18 Department of Defense Cyber Workforce
19 Framework to allow for the military depart-
20 ments to identify, assess, track, manage, and
21 assign personnel with computer programming,
22 coding, and artificial intelligence skills through
23 established mechanisms, under the policies of
24 the military departments with respect to formal

1 military occupational specialties and career field
2 management, including—

3 (i) development of a career field or
4 separate occupational code for computer
5 programming occupational areas aligned
6 with such work roles; and

7 (ii) development of a unique special
8 skills or experience designator or qualifica-
9 tions, tracked independently of a career
10 field, for computer programming occupa-
11 tional areas aligned with such work roles;

12 (C) conducting an assessment of members
13 of the Armed Forces who have completed the
14 qualification process of the military department
15 concerned or who qualify based on existing
16 skills and training across computer program-
17 ming occupational areas; and

18 (D) maintaining continued awareness of
19 members of the Armed Forces described in sub-
20 paragraph (C).

21 (c) RESPONSIBILITIES.—The Secretary of each mili-
22 tary department, in consultation with the Assistant Sec-
23 retary of the military department for Manpower and Re-
24 serve Affairs and the Chief Digital and Artificial Intel-

1 ligen­ce Officer of the Office of the Secretary of Defense,
2 shall—

3 (1) be responsible for development and dis-
4 charge of the policy set forth in subsection (b); and

5 (2) carry out that responsibility through an of-
6 ficer or employee of the military department as-
7 signed by the Secretary for that purpose.

8 (d) DUTIES.—In developing and providing for the
9 discharge of the policy set forth in subsection (b), the Sec-
10 retary of each military department, in consultation with
11 the Assistant Secretary of the military department for
12 Manpower and Reserve Affairs, the Chief Information Of-
13 ficer of the military department, the Chief Information Of-
14 ficer of the Department of Defense, and the Chief Digital
15 and Artificial Intelligence Officer of the Office of the Sec-
16 retary of Defense, shall establish a robust human capital
17 infrastructure to provide the combatant commands force
18 capability associated with computer programming, coding,
19 and artificial intelligence skills, including by meeting re-
20 lated manning, systems, training, and other related fund-
21 ing requirements.

22 (e) IMPLEMENTATION PLANS.—

23 (1) IN GENERAL.—Not later than 180 days
24 after the date of the enactment of this Act, the Sec-
25 retary of each military department shall submit to

1 the Committees on Armed Services of the Senate
2 and the House of Representatives a plan for imple-
3 menting the policy set forth in subsection (b).

4 (2) INCLUSION IN BUDGET JUSTIFICATION MA-
5 TERIALS.—The Secretary of each military depart-
6 ment shall include an update on implementation of
7 the policy set forth in subsection (b) in the budget
8 justification materials submitted in support of the
9 Department of Defense’s budget (as submitted with
10 the budget of the President under section 1105(a) of
11 title 31, United States Code) for fiscal year 2025
12 and each fiscal thereafter until all milestones set
13 forth in the plan submitted under paragraph (1) by
14 the Secretary have been met.

15 **SEC. 4. RESERVE COMPONENT COMPUTER PROGRAMMING**
16 **SKILLS.**

17 (a) FINDINGS.—Congress makes the following find-
18 ings:

19 (1) The reserve components provide critical ca-
20 pabilities to the Department of Defense to augment
21 and enhance the active components. Those capabili-
22 ties include experiences and skills associated with
23 both the members’ military career fields and their ci-
24 vilian occupations and positions.

1 (2) The Reserve Force Policy Board identified
2 in August 2020 the inability of the Department of
3 Defense to leverage the civilian skills of members of
4 the reserve components when needed.

5 (3) The Department of Defense no longer main-
6 tains the Civilian Employment Information Pro-
7 gram, which provided a database of the civilian em-
8 ployment information and skills associated with
9 members of the reserve components.

10 (4) There is no mechanism to evaluate quali-
11 fication status and present the surge and augmenta-
12 tion capabilities of the reserve components in pro-
13 viding computer programming occupational capabili-
14 ties, experiences, and skills.

15 (b) POLICY.—

16 (1) IN GENERAL.—It shall be a policy of the
17 Armed Forces to utilize a robust human capital in-
18 frastructure to bolster the capacity of the reserve
19 components to evaluate, track, and present a quali-
20 fied and known standard to the military depart-
21 ments with respect to computer programming occu-
22 pational areas.

23 (2) ELEMENTS.—The policy set forth in para-
24 graph (1) shall be achieved through—

1 (A) a process by which members of a re-
2 serve component are able to gain occupational
3 or career field designation based on policies es-
4 tablished under section 3 using experiences,
5 training, or skills developed as a result of their
6 civilian occupations;

7 (B) awareness, based on policies estab-
8 lished under section 3, of the existing skills of
9 members of the reserve components, developed
10 as a result of their civilian occupations, based
11 on an initial baseline and ongoing tracking; and

12 (C) policies that allow the military depart-
13 ments and the combatant commands to effec-
14 tively leverage reserve component members who
15 meet the career field requirements established
16 pursuant to section 3 to support current oper-
17 ations fully during reserve periods.

18 (c) RESPONSIBILITY.—The Secretary of each military
19 department, in consultation with the Assistant Secretary
20 of the military department for Manpower and Reserve Af-
21 fairs, the Chief of the Reserve Command of the military
22 department, and the Chief of the National Guard Bureau,
23 shall—

24 (1) be responsible for development and dis-
25 charge of the policy set forth in subsection (b); and

1 (2) carry out that responsibility through an of-
2 ficer or employee of that military department as-
3 signed by the Secretary for that purpose.

4 (d) DUTIES.—In developing and providing for the
5 discharge of the policy set forth in subsection (b), the Sec-
6 retary of each military department, in consultation with
7 the Assistant Secretary of the military department for
8 Manpower and Reserve Affairs, the Chief of the Reserve
9 Command of the military department, and the Chief of
10 the National Guard Bureau, shall—

11 (1) establish a process and procedures by which
12 members of the reserve component of the military
13 department are able to satisfy qualification stand-
14 ards for occupational policies established under sec-
15 tion 3 based on experiences, training, or skills
16 achieved as a result of their civilian occupations;

17 (2) conduct an assessment of the members of
18 the reserve component that maintain computer pro-
19 gramming, coding, and artificial intelligence skills in
20 their civilian occupations;

21 (3) develop and program for a digital platform
22 or application to track computer programming, cod-
23 ing, and artificial intelligence skills associated with
24 computer programming career field policies; and

1 (4) develop policies to identify, assign, and inte-
2 grate members described in paragraph (2) into cur-
3 rent operations to fully leverage those skills during
4 reserve periods.

5 (e) IMPLEMENTATION PLANS.—

6 (1) IN GENERAL.—Not later than 180 days
7 after the date of the enactment of this Act, the Sec-
8 retary of each military department and the Chief of
9 the National Guard Bureau shall each submit to the
10 Committees on Armed Services of the Senate and
11 the House of Representatives a plan for imple-
12 menting the policy set forth in subsection (b).

13 (2) INCLUSION IN BUDGET JUSTIFICATION MA-
14 TERIALS.—The Secretary of each military depart-
15 ment and the Chief of the National Guard Bureau
16 shall each include an update on implementation of
17 the policy set forth in subsection (b) in the budget
18 justification materials submitted in support of the
19 Department of Defense’s budget (as submitted with
20 the budget of the President under section 1105(a) of
21 title 31, United States Code) for fiscal year 2025
22 and each fiscal year thereafter until all milestones
23 set forth in the plan submitted under paragraph (1)

- 1 by the Secretary or the Chief, as the case may be,
- 2 have been met.

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