

116TH CONGRESS  
1ST SESSION

**S.** \_\_\_\_\_

To require digital engineering as a core competency of the Armed Forces,  
and for other purposes.

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IN THE SENATE OF THE UNITED STATES

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Mr. HEINRICH introduced the following bill; which was read twice and referred  
to the Committee on \_\_\_\_\_

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## **A BILL**

To require digital engineering as a core competency of 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 “Armed Forces Digital  
5 Advantage Act”.

6 **SEC. 2. DIGITAL ENGINEERING AS A CORE COMPETENCY**  
7 **OF THE ARMED FORCES.**

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

1           (1) The National Defense Strategy states that  
2           the Department of Defense will need to “emphasize  
3           new skills and complement our current workforce  
4           with information experts, data scientists, computer  
5           programmers, and basic science researchers and en-  
6           gineers—to use information, not simply manage it.  
7           The Department will also continue to explore  
8           streamlined, non-traditional pathways to bring crit-  
9           ical skills into service, expanding access to outside  
10          expertise”.

11          (2) The Department workforce is challenged in  
12          its ability to develop, use, update, and store digital  
13          information.

14          (3) Transformational technologies, including  
15          Artificial Intelligence, 5G telecommunications serv-  
16          ices, and cloud computing, are presenting new op-  
17          portunities and challenges for the Department.

18          (4) Department modernization programs de-  
19          pend almost entirely on the integration of state-of-  
20          the-art software, data, and information technology,  
21          and will require a workforce that understands digital  
22          engineering.

23          (5) The establishment of the Joint Artificial In-  
24          telligence Center (JAIC) in 2018 was an important  
25          step to accelerate the delivery of, and scale the De-

1       partment-wide impact of, artificial intelligence—en-  
2       abled capabilities, and a workforce experienced in  
3       computer sciences and digital engineering will be  
4       critical to the success of the Center and the Depart-  
5       ment.

6               (6) The Defense Innovation Board stated that,  
7       in order to fulfill its mission in the future, the De-  
8       partment will need a “human capital strategy that  
9       will ensure that DoD can grow and maintain ade-  
10      quate computer science capability and capacity for  
11      the wide range of software-centric requirements that  
12      are unmet today and will only continue to grow”.

13      (b) POLICY.—

14              (1) IN GENERAL.—It shall be a policy of the  
15      Armed Forces to promote and maintain digital engi-  
16      neering as a core competency of the Armed Forces,  
17      which policy shall be achieved by—

18              (A) the recruitment, development, and  
19              incentivization of retention in and to the Armed  
20              Forces of individuals with aptitude, experience,  
21              proficient expertise, or a combination thereof in  
22              digital engineering;

23              (B) the development and maintenance of  
24              multiple career tracks on digital engineering,  
25              and related digital competencies (including data

1 science, machine learning, software engineering,  
2 software product management, and artificial in-  
3 telligence product management) for members of  
4 the Armed Forces, including the development  
5 and maintenance of training, education, talent  
6 management, incentives, and promotion policies  
7 in support of members at all levels of such ca-  
8 reer tracks; and

9 (C) the development and application of ap-  
10 propriate readiness standards and metrics to  
11 measure and report on the overall capability,  
12 capacity, utilization, and readiness of digital en-  
13 gineering forces to develop and deliver oper-  
14 ational capabilities and employ modern business  
15 practices.

16 (2) DIGITAL ENGINEERING.—For purposes of  
17 this section, digital engineering is the discipline and  
18 set of skills involved in the creation, processing,  
19 transmission, integration, and storage of digital  
20 data.

21 (c) RESPONSIBILITY.—

22 (1) IN GENERAL.—The Under Secretary of De-  
23 fense for Personnel and Readiness shall be respon-  
24 sible for the development and discharge of the policy  
25 set forth in subsection (a), and shall carry out such

1 responsibility through an officer or employee of the  
2 Department of Defense assigned by the Under Sec-  
3 retary for that purpose.

4 (2) DESIGNATION.—The individual assigned  
5 pursuant to paragraph (1) shall be known as the  
6 “Chief Digital Engineering Recruitment and Man-  
7 agement Officer of the Department of Defense” (in  
8 this section referred to as the “Officer”).

9 (3) DURATION OF POSITION.—The requirement  
10 for the Officer under paragraph (1) shall expire on  
11 September 30, 2029.

12 (d) DUTIES.—In developing and providing for the  
13 discharge of the policy set forth in subsection (a), the Offi-  
14 cer shall, in close consultation with the Assistant Secre-  
15 taries of the military department for Manpower and Re-  
16 serve Affairs, do the following:

17 (1) Develop for, and enhance within, the re-  
18 cruitment programs of the Armed Force various core  
19 initiatives, programs, activities, and mechanisms,  
20 tailored to the unique needs of each Armed Force,  
21 to identify and recruit to the Armed Forces individ-  
22 uals with demonstrated aptitude, interest, proficient  
23 expertise, or a combination thereof in digital engi-  
24 neering particularly, and in science, technology, en-  
25 gineering, and mathematics (STEM) generally, in-

1 including initiatives, programs, activities, and mecha-  
2 nisms to target populations of individuals not typi-  
3 cally aware of opportunities in the Armed Forces for  
4 a digital engineering career.

5 (2) Establish one or more flexible career tracks  
6 and identifiers for digital engineering and related  
7 digital competencies tailored to the unique needs for  
8 each Armed Force, including appropriate military  
9 occupational specialties (MOS) and meaningful op-  
10 portunities for career development, talent manage-  
11 ment, and promotion within such career tracks.

12 (3) Develop and maintain education, training,  
13 doctrine, rotational opportunities, and professional  
14 development activities to support members of the  
15 Armed Forces at each level of each career track es-  
16 tablished pursuant to paragraph (2).

17 (4) Coordinate and synchronize digital force  
18 management activities throughout the Department  
19 of Defense, advise the Secretary of Defense on all  
20 matters pertaining to the health and readiness of  
21 digital forces, convene a Department-wide executive  
22 steering group, and submit to Congress an annual  
23 report on the readiness of digital forces and progress  
24 toward achieving the policy set forth in subsection  
25 (a).

1           (5) Create a Department-wide mechanism to  
2 track digital expertise in the workforce, develop and  
3 maintain organizational policies, strategies, and  
4 plans sufficient to build, maintain, and refresh inter-  
5 nal capacity at scale, and report to the Secretary  
6 quarterly on the health and readiness of digital  
7 forces.

8           (6) Assist the military departments in design-  
9 ing, developing, and executing programs and incen-  
10 tives to retain, track, and oversee digital expertise  
11 among members of the Armed Forces on active duty.

12           (7) At the request of the Chief of Staff of an  
13 Armed Force, or the head of another component or  
14 element of the Department, undertake an executive  
15 search for key leadership positions in digital engi-  
16 neering in such Armed Force, component, or ele-  
17 ment, and develop and deploy agile hiring processes  
18 to fill such positions.

19           (8) Identify necessary changes in authorities,  
20 policies, resources, or a combination thereof to fur-  
21 ther the policy set forth in subsection (a), and sub-  
22 mit to Congress a report on such changes.

23           (e) IMPLEMENTATION.—Commencing not later than  
24 January 1, 2022, each Assistant Secretary of a military  
25 department for Manpower and Reserve Affairs shall imple-

1 ment and maintain the policy set forth in subsection (a)  
2 for the Armed Forces under the jurisdiction of such As-  
3 sistant Secretary through implementation and mainte-  
4 nance of the matters developed and established by the Of-  
5 ficer pursuant to subsection (d).