

**H.R. 7900—FY23 NATIONAL DEFENSE
AUTHORIZATION BILL**

**SUBCOMMITTEE ON CYBER,
INNOVATIVE TECHNOLOGIES, AND
INFORMATION SYSTEMS**

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SUMMARY OF BILL LANGUAGE

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DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

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SUBTITLE B—PROGRAM REQUIREMENTS, RESTRICTIONS, AND LIMITATIONS

Section 213—Support for Research and Development of Bioindustrial Manufacturing Processes

This section would direct the Secretary of Defense to expand or create additional Manufacturing Innovation Institutes to pilot and scale bioindustrial manufacturing processes as well as require a plan on how the Secretary of Defense plans to implement these authorities, including descriptions and locations of the bioindustrial manufacturing facilities.

Section 215—Pilot Program to Support the Development of Patentable Inventions in the Department of the Navy

This section would require the Secretary of the Navy to carry out a pilot program to expand the support available to certain personnel who seek to engage in the development of patentable inventions.

SUBTITLE C—PLANS, REPORTS, AND OTHER MATTERS

Section 223—Independent Review and Assessment of Test and Evaluation Resource Planning

This section would require the Secretary of Defense to enter into an agreement with a federally funded research and development center to conduct an independent review and assessment of the Strategic Plan for Test Resources, as prepared by the Department of Defense Test Resource Management Center.

Section 224—Study on Costs Associated with Underperforming Software and Information Technology

This section would direct the Secretary of Defense to contract with a federally funded research and development center to perform a study on the cost poorly designed and performing software and information technology systems impose on the Department of Defense and the military services in terms of lost working hours on a yearly basis. The study would also make recommendations on how to reduce these burdens.

Section 225—Study and Report on Sufficiency of Test and Evaluation Resources for Certain Major Defense Acquisition Programs

This section would require the Director of Operational Test and Evaluation to conduct a study of at least one major defense acquisition program within each of the Air Force, Army, Marine Corps, and Navy to determine the sufficiency of the test and evaluation resources supporting such program.

Section 226—Periodic Reports on Risk Distribution within Research, Development, Test, and Evaluation Activities

This section would require the Secretary of Defense to submit reports on the risk information on the Department of Defense's research portfolio. As part of this risk information, the Department would assess if the risk distribution in the research and development portfolio is optimal for the Department.

TITLE VIII—ACQUISITION POLICY, ACQUISITION MANAGEMENT, AND RELATED MATTERS

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SUBTITLE D—PROVISIONS RELATING TO SOFTWARE AND TECHNOLOGY

Section 833—Report on Covered Software Development

This section would direct the Under Secretary of Defense for Acquisition and Sustainment to report the actual software delivery times for efforts using incremental software development. The report would categorize incremental deliveries times. If a delivery was not made within 12 months, the report would require an explanation.

TITLE XV—CYBER AND INFORMATION OPERATIONS MATTERS

LEGISLATIVE PROVISIONS

SUBTITLE B—INFORMATION OPERATIONS

Section 1512—Limitation on Availability of Certain Funds until Submission of Joint Lexicon for Terms Related to Information Operations

This section would limit funding until the Department of Defense develops a joint lexicon for terms related to information operations, including information environment, operations in the information environment, and information-related

capabilities in compliance with section 1631(g) of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92).

SUBTITLE C—REPORTS AND OTHER MATTERS

Section 1532—Independent Review of Posture and Staffing Levels of Office of the Chief Information Officer

This section would direct the Secretary of Defense to authorize and oversee a comprehensive review of the current posture and manning of the Office of the Chief Information Officer. This section would also require that the review include recommendations based on the review's findings to be presented to the congressional defense committees.

Section 1533—Comprehensive Review of Cyber Excepted Service

This section would direct the Chief Information Officer of the Department of Defense, in coordination with the Chief Digital and Artificial Intelligence Officer and the Principal Cyber Advisor, and in consultation with the Under Secretary of Defense for Personnel and Readiness, to conduct a review of the Cyber Excepted Service.

BILL LANGUAGE

1 **SEC. 213 [Log 75066]. SUPPORT FOR RESEARCH AND DE-**
2 **VELOPMENT OF BIOINDUSTRIAL MANUFAC-**
3 **TURING PROCESSES.**

4 (a) AUTHORIZATION.—Subject to the availability of
5 appropriations, the Secretary of Defense shall provide sup-
6 port to manufacturing innovation institutes for the re-
7 search and development of innovative bioindustrial manu-
8 facturing processes and the development of a network of
9 bioindustrial manufacturing facilities to improve the abil-
10 ity of the industrial base to use such processes for the
11 production of chemicals, materials, and other products
12 necessary to support national security or secure fragile
13 supply chains.

14 (b) FORM OF SUPPORT.—The support provided
15 under subsection (a) may consist of—

16 (1) the establishment of one or more manufac-
17 turing innovation institutes specializing in the re-
18 search and development of bioindustrial manufac-
19 turing processes;

20 (2) providing funding to one or more existing
21 manufacturing innovation institutes—

22 (A) to support the research and develop-
23 ment of bioindustrial manufacturing processes;

24 or

25 (B) to otherwise expand the bioindustrial
26 manufacturing capabilities of such institutes;

1 (3) the establishment of dedicated facilities
2 within one or more manufacturing innovation insti-
3 tutes to serve as regional hubs for the research, de-
4 velopment, and the scaling of bioindustrial manufac-
5 turing processes and products to higher levels of
6 production; or

7 (4) designating a manufacturing innovation in-
8 stitute to serve as the lead entity responsible for in-
9 tegrating a network of pilot and intermediate scale
10 bioindustrial manufacturing facilities.

11 (c) ACTIVITIES.—A manufacturing innovation insti-
12 tute that receives support under subsection (a) shall carry
13 out activities relating to the research, development, test,
14 and evaluation of innovative bioindustrial manufacturing
15 processes and the scaling of bioindustrial manufacturing
16 products to higher levels of production, which may in-
17 clude—

18 (1) research on the use of bioindustrial manu-
19 facturing to create materials such as polymers, coat-
20 ings, resins, commodity chemicals, and other mate-
21 rials with fragile supply chains;

22 (2) demonstration projects to evaluate bioindus-
23 trial manufacturing processes and technologies;

1 (3) activities to scale bioindustrial manufac-
2 turing processes and products to higher levels of
3 production;

4 (4) strategic planning for infrastructure and
5 equipment investments for bioindustrial manufac-
6 turing of defense-related materials;

7 (5) analyses of bioindustrial manufactured
8 products and validation of the application of biologi-
9 cal material used as input to new and existing proc-
10 esses to aid in future investment strategies and the
11 security of critical supply chains;

12 (6) the selection, construction, and operation of
13 pilot and intermediate scale bioindustrial manufac-
14 turing facilities;

15 (7) development and management of a network
16 of facilities to scale production of bioindustrial prod-
17 ucts;

18 (8) activities to address workforce needs in bio-
19 industrial manufacturing;

20 (9) establishing an interoperable, secure, digital
21 infrastructure for collaborative data exchange across
22 entities in the bioindustrial manufacturing commu-
23 nity, including government agencies, industry, and
24 academia;

1 (10) developing and implementing digital tools,
2 process security and assurance capabilities, cyberse-
3 curity protocols, and best practices for data storage,
4 sharing and analysis; and

5 (11) such other activities as the Secretary of
6 Defense determines appropriate.

7 (d) CONSIDERATIONS.—In determining the number,
8 type, and location of manufacturing innovation institutes
9 or facilities to support under subsection (a), the Secretary
10 of Defense shall consider—

11 (1) how the institutes or facilities may com-
12 plement each other by functioning as a together as
13 a network;

14 (2) how to geographically distribute support to
15 such institutes or facilities—

16 (A) to maximize access to biological mate-
17 rial needed as an input to bioindustrial manu-
18 facturing processes;

19 (B) to leverage available industrial and
20 academic expertise;

21 (C) to leverage relevant domestic infra-
22 structure required to secure supply chains for
23 chemicals and other materials; and

1 (D) to complement the capabilities of other
2 manufacturing innovation institutes and similar
3 facilities; and

4 (3) how the activities supported under this sec-
5 tion can be coordinated with relevant activities of
6 other departments and agencies of the Federal Gov-
7 ernment.

8 (e) PLAN REQUIRED.—

9 (1) IN GENERAL.—Not later than 180 days
10 after the date of the enactment of this Act, the Sec-
11 retary of Defense shall submit to the appropriate
12 congressional committees and the National Security
13 Commission on Emerging Biotechnology a plan for
14 the implementation of this section that includes—

15 (A) a description of types, relative sizes,
16 and locations of the manufacturing innovation
17 institutes or facilities the Secretary intends to
18 establish or support under this section;

19 (B) a general description of the focus of
20 each institute or facility, including the types of
21 bioindustrial manufacturing equipment, if any,
22 that are expected to be procured for each such
23 institute or facility;

24 (C) a general description of how the insti-
25 tutes and facilities will work as a network to

1 maximize the diversity of bioindustrial products
2 available to be produced by the network;

3 (D) an explanation of how the network will
4 support the establishment and maintenance of
5 the bioindustrial manufacturing industrial base;
6 and

7 (E) an explanation of how the Secretary
8 intends to ensure that bioindustrial manufac-
9 turing activities conducted under this section
10 are modernized digitally, including through—

11 (i) the use of a data automation to
12 represent processes and products as models
13 and simulations; and

14 (ii) the implementation of measures to
15 address cybersecurity and process assur-
16 ance concerns.

17 (2) BRIEFINGS.—Not later than 180 days after
18 the date of the submittal of the plan under para-
19 graph (1), and biannually thereafter for five years,
20 the Secretary of Defense shall provide to the appro-
21 priate congressional committees a briefing on the
22 progress toward the implementation of the plan.

23 (f) DEFINITIONS.—In this section:

24 (1) The term “appropriate congressional com-
25 mittees” means—

1 (A) the congressional defense committees;

2 (B) the Committee on Agriculture, Nutri-
3 tion, and Forestry and the Committee on Com-
4 merce, Science, and Transportation of the Sen-
5 ate; and

6 (C) the Committee on Agriculture and the
7 Committee on Science, Space, and Technology
8 of the House of Representatives.

9 (2) The term “bioindustrial manufacturing”
10 means the use of living organisms, cells, tissues, en-
11 zymes, or cell-free systems to produce materials and
12 products for non-pharmaceutical applications.

13 (3) The term “manufacturing innovation insti-
14 tute” means a Manufacturing USA institute (as de-
15 scribed in section 34(d) of the National Institute of
16 Standards and Technology Act (15 U.S.C. 278s(d)))
17 that is funded by the Department of Defense.

1 **SEC. 215 [Log 75401]. PILOT PROGRAM TO SUPPORT THE**
2 **DEVELOPMENT OF PATENTABLE INVENTIONS**
3 **IN THE DEPARTMENT OF THE NAVY.**

4 (a) IN GENERAL.—Beginning not later than 120
5 days after the date of the enactment of this Act, the Sec-
6 retary of the Navy shall carry out a pilot program to ex-
7 pand the support available to covered personnel who seek
8 to engage in the development of patentable inventions
9 that—

10 (1) have applicablity to the job-related functions
11 of such personnel; and

12 (2) may have applicability in the civilian sector.

13 (b) ACTIVITIES.—As part of the pilot program under
14 subsection (a), the Secretary of the Navy shall—

15 (1) expand outreach to covered personnel re-
16 garding the availability of patent-related training,
17 legal assistance, and other support for personnel in-
18 terested in developing patentable inventions;

19 (2) expand the availability of patent-related
20 training to covered personnel, including by making
21 such training available online;

22 (3) clarify and issue guidance detailing how
23 covered personnel, including personnel outside of the
24 laboratories and other research organizations of the
25 Department of the Navy, may—

1 (A) seek and receive support for the devel-
2 opment of patentable inventions; and

3 (B) receive a portion of any royalty or
4 other payment as an inventor or coinventor
5 such as may be due under section
6 14(a)(1)(A)(i) of the Stevenson-Wylder Tech-
7 nology Innovation Act of 1980 (15 U.S.C.
8 3710c(a)(1)(A)(i)); and

9 (4) carry out other such activities as the Sec-
10 retary determines appropriate in accordance with the
11 purposes of the pilot program.

12 (c) TERMINATION.—The authority to carry out the
13 pilot program under subsection (a) shall terminate three
14 years after the date of the enactment of this Act.

15 (d) DEFINITIONS.—In this section:

16 (1) The term “covered personnel” means mem-
17 bers of the Navy and Marine Corps and civilian em-
18 ployees of the Department of the Navy, including
19 members and employees whose primary duties do
20 not involve research and development.

21 (2) The term “patentable invention” means an
22 invention that is patentable under title 35, United
23 States Code.

1 **SEC. 223 [Log 75458]. INDEPENDENT REVIEW AND ASSESS-**
2 **MENT OF TEST AND EVALUATION RESOURCE**
3 **PLANNING.**

4 (a) REVIEW AND ASSESSMENT.—Not later than 60
5 days after the date of the enactment of this Act, the Sec-
6 retary of Defense shall seek to enter into an agreement
7 with a federally funded research and development center
8 to conduct an independent review and assessment of the
9 Strategic Plan for Test Resources, as prepared by the De-
10 partment of Defense Test Resource Management Center.

11 (b) ELEMENTS.—The review and assessment under
12 subsection (a) shall include the following:

13 (1) An assessment of the adequacy of the 30-
14 year planning horizon that serves as the basis for
15 the Strategic Plan for Test Resources.

16 (2) An assessment of whether and to what ex-
17 tent prior forecasts of the test and evaluation needs
18 of the Department of Defense align with investments
19 made by the Department in test and evaluation re-
20 sources.

21 (3) An identification and assessment of—

22 (A) any shortcomings in the infrastructure,
23 personnel, and equipment of the test and eval-
24 uation enterprise of the Department; and

25 (B) any risks that the status of such enter-
26 prise may pose with respect to the ability of the

1 Department to meet its current and future test
2 and evaluation needs.

3 (4) An assessment of whether and to what ex-
4 tent the test and evaluation efforts of the Depart-
5 ment sufficiently address software-intensive, multi-
6 domain, and continuously developed capabilities.

7 (5) Such other matters as the Secretary of De-
8 fense determines appropriate.

9 (c) REPORT REQUIRED.—Not later than 180 days
10 after the date on which the Secretary of Defense enters
11 into an agreement with a federally funded research and
12 development center under subsection (a), the center shall
13 submit to the Secretary and the congressional defense
14 committees a report on the results of the study conducted
15 under such subsection.

1 **SEC. 224 [Log 75005]. STUDY ON COSTS ASSOCIATED WITH**
2 **UNDERPERFORMING SOFTWARE AND INFOR-**
3 **MATION TECHNOLOGY.**

4 (a) **STUDY REQUIRED.**—The Secretary of Defense
5 shall seek to enter into a contract with a federally funded
6 research and development center to conduct an inde-
7 pendent study on the impacts, and challenges associated
8 with the use of software and information technology, in-
9 cluding potential solutions to such challenges.

10 (b) **ELEMENTS.**—The independent study conducted
11 under subsection (a) shall include the following:

12 (1) A survey of members of the Armed Forces
13 under the jurisdiction of a Secretary of a military
14 department to identify the most important software
15 and information technology challenges that result in
16 lost working hours, including an estimate of the
17 number and cost of lost working hours for each mili-
18 tary department, the impact of each challenge on re-
19 tention, and the negative impact to any mission.

20 (2) A summary of the policy or technical chal-
21 lenges that limit the ability of each Secretary of a
22 military department to implement needed software
23 and information technology reforms, based on inter-
24 views conducted with individuals who serve as chief
25 information officer (or an equivalent position) in a
26 military department.

1 (3) Recommendations to address the challenges
2 described in paragraph (1) and improve the proc-
3 esses through which the Secretary provides software
4 and information technology Departmentwide.

5 (c) REPORT REQUIRED.—Not later than one year
6 after the date of the enactment of this Act, a federally
7 funded research and development center described in sub-
8 section (a) shall submit to the Secretary of Defense and
9 the congressional defense committees a report on any
10 independent study conducted under this section.

11 (d) SOFTWARE AND INFORMATION TECHNOLOGY DE-
12 FINED.—In this section, the term “software and informa-
13 tion technology” does not include embedded software and
14 information technology used for weapon systems.

1 **SEC. 225 [Log 74851]. STUDY AND REPORT ON SUFFICIENCY**
2 **OF TEST AND EVALUATION RESOURCES FOR**
3 **CERTAIN MAJOR DEFENSE ACQUISITION**
4 **PROGRAMS.**

5 (a) STUDY.—The Director of Operational Test and
6 Evaluation of the Department of Defense shall conduct
7 a study of at least one major defense acquisition program
8 within each covered Armed Force to determine the suffi-
9 ciency of the test and evaluation resources supporting such
10 program.

11 (b) ELEMENTS.—The study under subsection (a)
12 shall include, with respect to each major defense acqui-
13 sition program evaluated as part of the study, the following:

14 (1) Identification of the test and evaluation re-
15 sources supporting the program as of the date of the
16 study.

17 (2) An evaluation of whether and to what ex-
18 tent such resources are sufficient to meet the needs
19 of the program assuming that test and evaluation
20 resources allocated for other purposes will not be re-
21 allocated to support the program in the future.

22 (3) If the test and evaluation resources identi-
23 fied under paragraph (1) are insufficient to meet the
24 needs of the program, an evaluation of the amount
25 of additional funding required to ensure the suffi-
26 ciency of such resources.

1 (4) The amount of Government-funded, con-
2 tractor-provided test and evaluation resources that
3 are currently provided or are planned to be provided
4 as part of the program of record.

5 (5) The future availability of any resources
6 identified under paragraph (4) for programs,
7 projects, and activities other than the major defense
8 acquisition program evaluated as part of the study.

9 (c) REPORT.—Not later than one year after the date
10 of the enactment of this Act, the Director of Operational
11 Test and Evaluation shall submit to the congressional de-
12 fense committees a report on the results of the study con-
13 ducted under subsection (a).

14 (d) DEFINITIONS.—In this section:

15 (1) The term “covered Armed Force” means
16 the Army, the Navy, the Marine Corps, and the Air
17 Force.

18 (2) The term “major defense acquisition pro-
19 gram” has the meaning given that term in section
20 4201 of title 10, United States Code.

1 **SEC. 226 [Log 74854]. PERIODIC REPORTS ON RISK DIS-**
2 **TRIBUTION WITHIN RESEARCH, DEVELOP-**
3 **MENT, TEST, AND EVALUATION ACTIVITIES.**

4 (a) **REPORTS REQUIRED.**—In accordance with sub-
5 section (d), the Secretary of Defense, acting through the
6 Under Secretary of Defense for Research and Engineering
7 and in consultation with the Secretaries of the military
8 departments, shall submit to the congressional defense
9 committees periodic reports on the distribution of risk
10 across the covered research activities of the Department
11 of Defense.

12 (b) **ELEMENTS.**—Each report under subsection (a)
13 shall include, with respect to the year covered by the re-
14 port, the following:

15 (1) A list of all covered research activities of
16 the Department of Defense with each such research
17 activity designated as either—

18 (A) research activity that is lower risk,
19 such as efforts aimed at the incremental im-
20 provement of an existing product; or

21 (B) research activity that is higher risk,
22 such as efforts aimed at the development of new
23 technology that could disrupt an entire field
24 (commonly referred to as “disruptive tech-
25 nology”).

1 (2) An assessment of whether the distribution
2 of covered research activities among the risk cat-
3 egories described in subparagraphs (A) and (B) of
4 paragraph (1) is optimal for serving the needs of the
5 Department of Defense.

6 (3) Such other information as the Secretary of
7 Defense determines appropriate.

8 (c) COVERED RESEARCH ACTIVITY DEFINED.—In
9 this section, the term “covered research activity” means
10 a program, project, or other activity of the Department
11 of Defense designated as budget activity 1 (basic re-
12 search), budget activity 2 (applied research), or budget ac-
13 tivity 3 (advanced technology development), as such budg-
14 et activity classifications are set forth in volume 2B, chap-
15 ter 5 of the Department of Defense Financial Manage-
16 ment Regulation (DOD 7000.14–R).

17 (d) SUBMITTAL OF REPORTS.—

18 (1) IN GENERAL.—The reports required under
19 subsection (a) shall be submitted as follows:

20 (A) The first such report shall be sub-
21 mitted by not later than February 1, 2023.

22 (B) A report shall be submitted at the
23 same time as each of the first three reports re-
24 quired under section 118c(e) of title 10, United

1 States Code, after the date of the enactment of
2 this Act.

3 (2) TERMINATION OF REQUIREMENT.—No re-
4 port shall be required to be submitted under this
5 section after the date of the submittal of the third
6 report under paragraph (1)(B).

1 **SEC. 833. [Log 74861]. REPORT ON COVERED SOFTWARE DE-**
2 **VELOPMENT.**

3 (a) REPORT.—Not later than one year after the date
4 of the enactment of this Act, and annually thereafter
5 through December 31, 2028, the Under Secretary of De-
6 fense for Acquisition and Sustainment, in consultation
7 with the Chief Information Officer of the Department of
8 Defense and the Chief Digital and Artificial Intelligence
9 Officer, shall submit to the congressional defense commit-
10 tees a report on the following:

11 (1) A description of covered software delivered
12 during the fiscal year preceding the date of the re-
13 port that is being developed using iterative develop-
14 ment, including a description of the capabilities de-
15 livered for operational use.

16 (2) For such covered software not developed
17 using iterative development, an explanation for not
18 using iterative development and a description of the
19 development method used.

20 (3) For each such covered software being devel-
21 oped using iterative development, the frequency with
22 which capabilities of such covered software were de-
23 livered, disaggregated as follows:

24 (A) Covered software for which capabilities
25 were delivered during period of less than three
26 months.

1 (B) Covered software for which capabilities
2 were delivered during period of more than three
3 months and less than six months.

4 (C) Covered software for which capabilities
5 were delivered during period of more than six
6 months and less than nine months.

7 (D) Covered software for which capabilities
8 were delivered during period of more than nine
9 months and less than 12 months.

10 (4) With respect to covered software described
11 in paragraph (2) for which capabilities of such cov-
12 ered software were not delivered in fewer than 12
13 months, an explanation of why such delivery was not
14 possible.

15 (b) DEFINITIONS.—In this section:

16 (1) The term “Chief Digital and Artificial Intel-
17 ligence Officer” means—

18 (A) the official designated as the Chief
19 Digital and Artificial Intelligence Officer of the
20 Department of Defense pursuant to the memo-
21 randum of the Secretary of Defense titled “Es-
22 tablishment of the Chief Digital and Artificial
23 Intelligence Officer” dated December 8, 2021;
24 or

1 (B) if there is no official designated as
2 such Officer, the official within the Office of the
3 Secretary of Defense with primary responsi-
4 bility for digital and artificial intelligence mat-
5 ters.

6 (2) The term “covered software” means soft-
7 ware that is being developed that—

8 (A) was acquired using a software acquisi-
9 tion pathway established under section 800 of
10 the National Defense Authorization Act for Fis-
11 cal Year 2020 (Public Law 116–92);

12 (B) is a covered defense business system,
13 as defined in section 2222(i) of title 10, United
14 States Code;

15 (C) is a major defense acquisition pro-
16 gram, as defined in section 4201 of such title;
17 or

18 (D) is a major system, as defined in sec-
19 tion 3041 of such title.

20 (3) The term “iterative development” has the
21 meaning given the term “agile or iterative develop-
22 ment” in section 891 of the National Defense Au-
23 thorization Act for Fiscal Year 2018 (Public Law
24 115–91; 131 Stat. 1509; 10 U.S.C. 1746 note).

1 **SEC. 1512.[Log 75015] LIMITATION ON AVAILABILITY OF**
2 **CERTAIN FUNDS UNTIL SUBMISSION OF**
3 **JOINT LEXICON FOR TERMS RELATED TO IN-**
4 **FORMATION OPERATIONS.**

5 Of the funds authorized to be appropriated by this
6 Act or otherwise made available for fiscal year 2023 for
7 operation and maintenance, Defense-wide, and available
8 for the Office of the Secretary of Defense for the travel
9 of persons, not more than 75 percent may be obligated
10 or expended until the date on which the Secretary submits
11 to the Committees on Armed Services of the House of
12 Representatives and the Senate the joint lexicon for terms
13 related to information operations required by section
14 1631(g)(1)(D) of the National Defense Authorization Act
15 for Fiscal Year 2020 (Public Law 116–92; 10 U.S.C. 397
16 note).

1 **SEC. 1532.[Log 74865] INDEPENDENT REVIEW OF POSTURE**
2 **AND STAFFING LEVELS OF OFFICE OF THE**
3 **CHIEF INFORMATION OFFICER.**

4 (a) IN GENERAL.—Not later than 180 days after the
5 date of the enactment of this Act, the Secretary of Defense
6 shall seek to enter into an agreement with an appropriate
7 non-Department of Defense entity for the conduct of a
8 comprehensive review of the posture and staffing levels of
9 the Office of the Chief Information Officer, as of the date
10 of the enactment of this Act.

11 (b) MATTERS FOR CONSIDERATION.—An agreement
12 under subsection (a) shall specify that the review con-
13 ducted under the agreement shall include the evaluation
14 of each of the following:

15 (1) Any limitations or constraints of the Office
16 of the Chief Information Officer in the carrying out
17 the entirety of the responsibilities specified in section
18 142(b) of title 10, United States Code, based on the
19 staffing levels of the Office as of the date of the en-
20 actment of this Act.

21 (2) The composition of civilian, military, and
22 contractor personnel assigned to the Office of the
23 Chief Information Officer, as of such date, including
24 the occupational series and military occupational
25 specialties of such personnel, relative to the respon-
26 sibilities specified in such section.

1 (3) The organizational construct of the Office
2 of the Chief Information Officer, as of such date.

3 (c) RECOMMENDATIONS.—An agreement under sub-
4 section (a) shall specify that the review conducted under
5 the agreement shall include recommendations for the
6 Chief Information Officer and the congressional defense
7 committees, including recommendations derived from the
8 matters for consideration specified under subsection (b).

9 (d) SUBMITTAL TO CONGRESS.—Not later than 30
10 days after the date of the completion of the review re-
11 quired under subsection (a), the Secretary of Defense shall
12 submit to the congressional defense committees a copy of
13 the review.

1 **SEC. 1533.[Log 74867] COMPREHENSIVE REVIEW OF CYBER**
2 **EXCEPTED SERVICE.**

3 (a) IN GENERAL.—Not later than 180 days after the
4 date of enactment of this Act, the Chief Information Offi-
5 cer of the Department of Defense, in coordination with
6 the Chief Digital and Artificial Intelligence Officer and the
7 Principal Cyber Advisor of the Department and in con-
8 sultation with the Under Secretary of Defense for Per-
9 sonnel and Readiness, shall conduct a comprehensive re-
10 view of the Cyber Excepted Service established pursuant
11 to section 1599f of title 10, United States Code.

12 (b) ELEMENTS.—The review required under sub-
13 section (a) shall include a consideration of each of the fol-
14 lowing elements:

15 (1) The potential and structural limitations of
16 the Cyber Excepted Service, including impediments
17 to mobility or advancement by civilian employees
18 currently in billets coded for Cyber Excepted Serv-
19 ice.

20 (2) Matters related to pay disparity and hin-
21 drances in compensation relative to the skill sets and
22 value of such civilian employees in the private sector.

23 (3) Criteria for eligibility of potential Depart-
24 ment of Defense components and entities for partici-
25 pation in the Cyber Excepted Service.

1 (4) The eligibility for participation in the Cyber
2 Eexcepted Service of civilian employees who are as-
3 signed to the Office of the Chief Digital and Artifi-
4 cial Intelligence Officer.

5 (c) RECOMMENDATIONS.—The review required under
6 subsection (a) shall include recommendations for the Sec-
7 retary of Defense and the congressional defense commit-
8 tees with respect to the improvement of the Cyber Ex-
9 cepted Service, including recommendations derived from
10 the consideration of the elements specified in subsection
11 (b).

12 (d) SUBMITTAL TO CONGRESS.—Not later than 30
13 days after the completion of the review required under
14 subsection (a), the Chief Information Officer shall submit
15 to the congressional defense committees a copy of the re-
16 view.

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DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, ARMY

Items of Special Interest

Microbolometer supply chain assessment

The committee is aware of the importance of long-wave infrared microbolometers in providing high-resolution thermal camera imaging capabilities to the warfighter. The committee notes recent investments by foreign competitors in advanced microbolometer technologies, and the importance of maintaining a competitive edge in the technology in order to ensure warfighter advantage in no- and low-light conditions. Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services by January 31, 2023, providing the Department of the Army's current strategy for microbolometer research, development, and production. This briefing should also include an assessment of the existing domestic microbolometer supply chain.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, AIR FORCE

Items of Special Interest

Briefing on Department of the Air Force software factories

The committee recognizes that Air Force software factories have made significant contributions to the Department of the Air Force's modernization efforts, particularly as software becomes an increasingly critical component of a modern and adaptable force. The committee notes that the Air Force's 16 software factories are in geographically diverse locations, which allows them unique access to Department of Defense installations and private sector and university innovators. Moreover, this enables the Air Force to leverage a diverse group of science, technology, engineering, and mathematics talent.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing to the House Committee on Armed Services not later than January 1, 2023, on the Air Force's plan for the structure of the Air Force software factories.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION, DEFENSE-WIDE

Items of Special Interest

Battery tracking and standardization

The committee is aware that batteries are essential to a number of activities and responsibilities of the Department of Defense. The committee is also aware that many battery types are dependent upon overseas manufacturing, critical minerals with vulnerable supply chains, or both. The committee is therefore concerned by some of the findings in the Report on Battery Supply Chain provided by the Under Secretary of Defense for Acquisition and Sustainment in January 2022.

The committee directs the Under Secretary of Defense for Research and Engineering, in coordination with the Under Secretary of Defense for Acquisition and Sustainment, to assess:

(1) the feasibility and desirability of creating and maintaining a centralized repository to track and coordinate mission critical batteries across the Department of Defense; and

(2) the feasibility of standardizing mission critical battery types, chemistries, and form factors.

The committee directs the Under Secretary of Defense for Research and Engineering to provide a briefing to the House Committee on Armed Services not later than December 31, 2022, detailing the results of this review and the implementation plans for any recommended actions contained therein.

Biotechnology industrial base strategic assessment

The committee recognizes the importance of creating a robust biotechnology industrial base. Therefore, the committee directs the Under Secretary of Defense for Research and Engineering to provide a report to the House Committee on Armed Services not later than February 1, 2023, on its efforts to assess the current biotechnology industrial base in the United States. The report should include an assessment of:

(1) military materials and goods that could be produced using biotechnology;

(2) the current and near-term biotechnology base capacity in the United States;

(3) gaps in the biotechnology industrial base, such as domestic manufacturing capabilities, supply chains, energy consumption, and workforce skills;

(4) risks to the biotechnology industrial base, including risks that may result in the elimination of, or failure to develop domestically, the needed biotechnology capabilities;

(5) actions the Department of Defense plans to take to address gaps and risks identified in the biotechnology industrial base; and

(6) recommendations for legislative, regulatory, and policy changes needed to strengthen the biotechnology industrial base.

Briefing on Department of Defense 5G test beds

The committee notes the importance of the Department of Defense's efforts to advance 5G and Future G technology. The committee, however, is concerned about the significant reduction in funding in the President's fiscal year 2023 budget request for these efforts and the status of the Department's implementation of section 224 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116-283).

Therefore, the committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than January 1, 2023, on the status of the Department's efforts to implement section 224 of Public Law 116-283.

Collaboration on positioning, navigation, and timing research

The committee recognizes the need for assured positioning, navigation, and timing (PNT) capabilities in the event that the Global Positioning System (GPS) is denied or disrupted. The committee understands that maintaining an advantage with PNT capabilities requires the Department of Defense to collaborate with industry, academia, and other government entities on PNT.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than February 1, 2023, on the Department's collaboration with industry and academia on PNT research and development. The briefing should include:

- (1) how the Department currently collaborates with industry, and if there are any opportunities for further collaboration; and
- (2) what current capabilities exist within colleges and universities for PNT research, including the ability to conduct classified research, and how the Department can support academia to develop a future workforce with the technical skills needed to advance PNT capabilities.

The committee also directs the Secretary of Defense to provide a report to the House Committee on Armed Services not later than February 1, 2023, on the Nationwide Integration of Time Resiliency for Operations (NITRO) effort. Specifically, the report should address:

- (1) the mission need, if any, for a timing system independent of GPS to support domestic National Guard operations;
- (2) current capability gaps identified in domestic timing infrastructure;
- (3) an analysis of alternatives on systems to fill those gaps, including NITRO;
- (4) estimated funding requirements and timelines for implementing a solution that includes considerations for the end-user equipment required, and eventual sustainment of the system; and
- (5) how the Department is collaborating with other Federal, State, or local entities on the effort.

Directed energy technologies

The committee is aware of recent testing at White Sands Missile Range that successfully demonstrated a directed energy system with continual shot availability and low technical downtime. The committee notes the relevance of this capability to a number of threats raised by geographic combatant commanders, including unmanned systems, rockets, artillery, mortars, and missiles, and the importance of continued research and development into deeper magazines and higher power levels with reduced size and weight.

The committee encourages the Department of Defense to support research and development into high duty cycle technologies for directed energy systems. Therefore the committee directs the Under Secretary of Defense for Research and Engineering to provide a briefing to the House Committee on Armed Services not later than December 30, 2022, on how recently developed technologies and capabilities for high duty cycle directed energy systems, including those supported through private sector internal research and development funds, compare with currently planned technologies. The briefing shall also address existing technical or organizational barriers that may prevent integration of more capable subsystems into current or planned systems.

Feasibility study of forward deployed biomanufacturing

The committee acknowledges advances in biomanufacturing technologies, which has the potential to save costs and add resiliency to supply chains.

Therefore, the committee directs the Secretary of the Army to submit a report to the House Committee on Armed Services not later than May 1, 2023, on the operational feasibility of forward deployed biomanufacturing capabilities in contested areas. The report should include:

- (1) an assessment of deploying forward biomanufacturing capabilities, including operational scalability and sustainability;
- (2) an identification of chemicals and materials that would be most needed in contested environments;
- (3) testing and evaluation requirements for forward deployed bio-industrial manufacturing technologies and infrastructure; and
- (4) estimated funding and timeline for the development, prototyping, and deployment for forward deployment of biomanufacturing.

Governance of modular open systems approach in positioning, navigation, and timing systems

The committee notes the Department of Defense's progress with developing a Department-wide reference architecture to define a modular open system approach for positioning, navigation, and timing (PNT) technologies. However, the committee is concerned about a lack of long-term programmatic governance of the reference architecture, such as ensuring the reference architecture is routinely updated as technology and the needs of the Department evolve.

Therefore, the committee directs the Chairs of the PNT Oversight Council to provide a briefing to the House Committee on Armed Services not later than March 31, 2023, on plans for the establishment of a governance system for the Department-wide PNT reference architecture that includes the formal assignment of responsibility, authority, and accountability for the continued development and maintenance of the reference architecture and its adoption. The briefing should include how such a governance system incentivizes program offices and industry to ensure compliance with current and future PNT reference architectures. The briefing should also include how the Department-wide reference architecture aligns with the military service-level architectures, any challenges between the Department-wide and military service-level reference architectures, and plans for how the Department will routinely update the architecture.

Implementing horizon scanning to identify emerging science technology

Given the rapid pace of innovation, the committee recognizes the need for the Department of Defense to adequately prepare for future technological and scientific changes, and to quickly respond to corresponding needs or gaps.

Therefore, the committee directs the Under Secretary of Defense for Research and Engineering to provide a briefing to the House Committee on Armed Services not later than December 31, 2022, on horizon scanning in the Department of Defense. The briefing should include a description of horizon scanning efforts at the Department, and processes, if any, to use horizon scanning to inform Department of Defense strategies.

Independent testing and validation of artificial intelligence models

The committee commends the Department of Defense for its progress in working to integrate artificial intelligence (AI) into major weapons platforms. The committee, however, is concerned by the low number of AI models that are developed and fielded in operational environments, which hinders the Department's ability to harness the power of AI.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than January 1, 2023, on the Department's efforts to incorporate a standardized, independent testing and validation process into the life cycle of AI-enabled models, systems, and applications. The report should include the following:

- (1) a review of the use of competitively awarded contracts to U.S. companies;
- (2) the Department's strategy for improving AI model risk management;
- (3) the Department's plans to increase the use of real-world simulated modeling; and
- (4) efforts to automate the testing and validation process of AI models.

Integration of commercially proven data

The committee notes that the development of artificial intelligence for warfighting applications is fundamentally underpinned by access to reliable data and robust infrastructure. Private sector artificial intelligence initiatives invest robustly in data infrastructure and the committee believes the Department of Defense must learn from this approach.

Therefore, the committee directs the Chief Digital and Artificial Intelligence Officer to provide a report to the House Committee on Armed Services not later than March 1, 2023, on the Department's integration of commercially proven data annotations and data infrastructure from nontraditional defense contractors in the development of artificial intelligence mission applications.

Partnership Intermediary Agreement policy clarification

The committee directs the Under Secretary of Defense for Research and Engineering to provide a report to the House Committee on Armed Services not later than April 15, 2023, on the need and feasibility of updating Department of Defense Instruction 5535.8, Department of Defense Technology Transfer Program, and any other relevant instructions and regulations to accomplish the following:

- (1) define which Department of Defense entities have the authority to establish partnership intermediary agreements;
- (2) clarify procedures for competitively selecting a partnership intermediary unless a sole source approach is determined as the best course;
- (3) allow Defense entities to fund Partnership Intermediary Agreements with research, development, testing and evaluation, operations and maintenance, or working capital funds if the use of those funds aligns with defense financial management policies;
- (4) permit Partnership Intermediary Agreements to be funded with either non-Federal acquisition regulation based (i.e. other transaction agreements) or Federal acquisition regulated based contract mechanisms;
- (5) provide guidelines for determining appropriate contract vehicles to establish partnership intermediary agreements; and
- (6) clarify the scope of activities generally permissible under a Partnership Intermediary Agreement.

Patentable innovation activity outside the laboratory system

The committee is aware that a proportion of patentable invention within the Department of Defense occurs outside the traditional laboratory system. Most recently, approximately 10 percent of patents issued in fiscal year 2021 have non-laboratory inventors, with widely varying proportions across the military services. The committee believes that such innovation outside the traditional process should be expanded and encouraged across the Department of Defense.

Accordingly, the committee directs the Under Secretary of Defense for Research and Engineering, in coordination with the Deputy Assistant Secretary of the Army for Research and Technology, the Deputy Assistant Secretary of the Air

Force for Science, Technology, and Engineering, and the Chief of Naval Research of the Navy, to provide a briefing to the House Committee on Armed Services not later than December 31, 2022, regarding the current scope of patentable innovation activities outside of the laboratory innovation ecosystem, possible mechanisms for increased support for such activities, and any additional authorities or funding necessary to implement such mechanisms.

Quantum computing report

The committee understands the revolutionary potential for quantum computing and the need for the Department of Defense to easily test quantum computing applications. To better understand quantum computing in the Department, the committee directs the Under Secretary of Defense for Research and Engineering to submit a report to the House Committee on Armed Services not later than March 31, 2023, that addresses the following:

- (1) the Department's strategy to accelerate quantum computing capabilities;
- (2) the Department's current access to quantum computing testbeds, including a description of those testbed capabilities and their owners or operators;
- (3) challenges and obstacles the Department has experienced, and anticipates, when using testbeds and other testing equipment;
- (4) what additional types of quantum computing testbeds (to include types of quantum computers) or other testing equipment the Department anticipates needing in the next 5 years, if any; and
- (5) the estimated cost of the testbeds or other testing equipment, along with the cost of setting up the testing environments.

Quantum cooperation between the United States and the United Kingdom

The committee is encouraged by a recent joint statement on cooperation in quantum information sciences and technologies between the United States and the United Kingdom.

The committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than February 1, 2023, on partnership efforts related to quantum between the Department of Defense, the U.K. Ministry of Defence, and other agencies, including an analysis of current laws and regulations that may impede the effective sharing of quantum capabilities between the two countries.

Report on artificial intelligence education strategy

Section 256 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) directed the Secretary of Defense to develop a holistic strategy for educating service members on artificial intelligence (AI), AI design, software

coding, potential military applications for AI, and its impact on strategy and doctrine, among other key subjects.

Therefore, the committee directs the Secretary of Defense, in coordination with the Secretaries of the military departments, to submit a report to the House Committee on Armed Services not later than April 1, 2023, on the status of the implementation plan directed under section 256 of Public Law 116-92. The report shall include an assessment of the Department of Defense's incorporation of its Ethical Principles for Artificial Intelligence into the Artificial Intelligence Education Strategy.

Report on commercial 5G deployment on military installations

The committee believes that robust information technology and wireless infrastructure contribute to readiness, safety, and quality of life for service members and their families.

Therefore, the committee directs the Secretary of Defense to provide a report to the House Committee on Armed Services not later than May 1, 2023, that includes the following:

- (1) an assessment of the number of military installations with access to commercial 5G infrastructure;
- (2) a review of barriers to broader commercial 5G deployment on military installations;
- (3) a review of the funding and approval process for commercial 5G deployment on military installations; and
- (4) a plan, to include funding and a timeline, on the feasibility of ensuring commercial 5G is available at all military installations.

Study on Defense Innovation Unit Blue Unmanned Aerial Vehicle Cleared List

The committee commends the Department of Defense for its efforts to ensure small unmanned aircraft systems (sUAS) procured by the Department comply with section 848 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) and ensure such sUAS are in compliance with restrictions on content from prohibited sources.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than January 1, 2023, on the feasibility and need of tasking the Defense Innovation Unit with developing an expedited process to include sUAS on its "Blue UAS Cleared List" for the Department.

Wing-in-ground effect vehicles

The committee is aware of the potential for wing-in-ground effect (WIG) vehicles to serve as mobility platforms capable of supporting a variety of relevant operational scenarios. In particular, the WIG vehicles could enable additional

capabilities across distributed maritime, expeditionary, and littoral operations, in particular related to sustainment of surface fleet and expeditionary combat systems, casualty evacuation, ship-to-ship and ship-to-shore logistics, combat search and rescue, and command, control, communication, computers, cyber, intelligence, surveillance, and reconnaissance (C5ISR) missions. The committee notes that previous WIG vehicles were regarded as niche technologies due to limited maneuverability and sensitivity to sea states; however, the committee believes that new technologies merit a reevaluation of the potential of these systems.

Accordingly, the committee directs the Under Secretary of Defense for Research and Engineering, in coordination with the Commander, U.S. Transportation Command and the Commander, U.S. Indo-Pacific Command, to provide a report to the House Committee on Armed Services not later than December 30, 2022, evaluating the potential of WIG vehicles as a potential capability for movement of personnel and cargo.

OPERATIONAL TEST AND EVALUATION, DEFENSE

Items of Special Interest

Assessment of contractor-provided test and evaluation capabilities

The committee directs the Director, Operational Test and Evaluation to provide a briefing to the House Committee on Armed Services not later than December 31, 2022, that identifies and assesses government-funded, contractor-provided test and evaluation capabilities, infrastructure, equipment, and other resources provided as part of current programs of record; the availability of such capabilities for the use of programs other than that under which the capabilities were procured; and the process and procedure for the use of contractor-procured capabilities by other programs and entities. This assessment may use a representative sample of programs of record for which government-funded, contractor-provided test and evaluation capabilities, infrastructure, equipment, and other resources are commonly required and provided.

Equipment shortfalls within the test and evaluation community

The committee is aware of significant infrastructure shortfalls within the test and evaluation community and is concerned that similar issues may exist with regard to critical test and evaluation equipment. Therefore, the committee directs the Director, Operational Test and Evaluation to provide a briefing to the House Committee on Armed Services not later than December 31, 2022, detailing any currently existing or forecast equipment shortfalls in the test and evaluation community, and the effects of any such shortfall on test and evaluation activities.

TITLE X—GENERAL PROVISIONS

ITEMS OF SPECIAL INTEREST

OTHER MATTERS

Comptroller General Review of Joint All-Domain Command and Control

The committee is concerned about the Department of Defense's progress in implementing the Joint All-Domain Command and Control (JADC2) concept. The committee recognizes the Department has made progress on JADC2 planning, but each of the military services has a separate effort to address the Department's JADC2 requirements concept, and it is unclear what capabilities will be delivered to the warfighter, how much they will cost, and when they will be delivered.

Therefore, the committee directs the Secretary of Defense to submit a report to the House Committee on Armed Services not later than December 30, 2022, that includes the following elements:

- (1) an inventory of JADC2-related development efforts, with a description of each's respective performance objectives, costs, and schedules;
- (2) a description of JADC2 performance goals and how the development efforts, identified under (1), will contribute to achieving those goals, including performance metrics; and
- (3) a list of potential JADC2 capability gaps and a plan for how the Department of Defense will ensure those capabilities are addressed and funded.

In addition, the committee directs the Comptroller General of the United States to conduct a review of the Department's JADC2 efforts and provide a briefing to the House Committee on Armed Services not later than March 31, 2023, on the Comptroller General's preliminary findings.

The committee also directs the Comptroller General to submit a report to the congressional defense committees, at a mutually agreed-upon time, on the Department's JADC2 efforts. The report shall include, but is not limited to, the following elements:

- (1) an overview of the Department current investment plans, schedules, and cost estimates for their current JADC2 efforts;
- (2) an evaluation of the Department's process for monitoring JADC2 costs, schedule, and performance; and
- (3) an assessment of the Department's challenges in developing and implementing JADC2 efforts and the Department's plans to address those challenges.

TITLE XV—CYBER AND INFORMATION OPERATIONS MATTERS

ITEMS OF SPECIAL INTEREST

Briefing on Disruption of Global Positioning System

The committee recognizes the increasing threat of Global Positioning System disruptions and believes it is critical to invest in technologies that provide resilient and assured position, navigation, and timing capabilities, including those provided through alternative navigation.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the House Committee on Armed Services not later than December 23, 2022, on its plan across the Future Years Defense Program (FYDP) to source and provide alternative navigation broadcast services. The briefing shall include:

- (1) the current level of alternative navigation broadcast services provided to the Department of Defense for development, test, evaluation, and operational uses;
 - (2) an assessment of infrastructure investments;
 - (3) the projected requirement across the FYDP for improved infrastructure and architecture;
 - (4) the projected funding requirements and timelines for each of the above;
- and
- (5) progress on radio frequency-based alternative navigation solutions.

Briefing on the Continuous Authority to Operate Initiative

In February 2022, the Department of Defense Chief Information Officer unveiled a new policy detailing the requirements for contracting officers to enact a "Continuous Authority to Operate" (cATO). The committee commends the initiative and its intent. The committee sees efforts such as cATO as essential to transforming the digital infrastructure and warfighting posture of the Department. Therefore, the committee directs the Chief Information Officer to provide a briefing to the House Committee on Armed Services not later than September 1, 2023, on the cATO effort, any reflections to date, and recommendations on similar initiatives to speed the digital transformation of the Department.

Comptroller General Review of Data Egress Fees

The committee is aware that data egress fees are charges cloud service providers (CSPs) bill to customers to defray the costs of moving their data from the CSP's cloud infrastructure to another CSP or the customer's own data center. Some prevailing cloud services models incentivize migrating data to the cloud by offsetting or waiving upfront adoption costs (for example, by increasing outbound data transmission charges) that in many cases make it cost-prohibitive to move one's data from one provider to another; in effect, making it relatively inexpensive to migrate data into the cloud but cost-prohibitive to switch CSPs or work with more than one, as is considered best practice. The committee is concerned that the Department of Defense has not accounted for these hidden costs, their lock-in effects, or the negative implications they could have on ensuring a competitive environment for future cloud procurements and the Department's need to leverage the breadth of innovation across multiple CSPs.

Therefore, the committee directs the Comptroller General of the United States to submit a report to the congressional defense committees not later than April 1, 2023, on data egress fees and the impact such fees could have on the Department of Defense as it transitions to cloud services and leverages innovation across multiple CSPs. Considerations as part of the Comptroller General's examination should include:

- (1) the relationship between data egress fees and potential for vendor lock-in;
- (2) how egress fees could affect different cloud architecture models;
- (3) how the Department is taking efforts to mitigate the potential impact of data egress fees; and
- (4) any additional matters the Comptroller General determines appropriate.

Cyber Auxiliary Utilization

In a globally and technologically complex environment, the Department of Defense requires an adaptability to leverage skills and knowledge where and when available. In recognition of this challenge, in April 2019 the United States Marine Corps established a Marine Corps Cyber Auxiliary, a volunteer organization of highly talented cyber experts who train, educate, assist, and mentor Marines to keep pace with constantly evolving cyber challenges. This is a novel approach that the committee recognizes and commends. In response, the committee directs the Principal Cyber Advisors of the United States Army, Navy, and Air Force each to provide a report to the House Committee on Armed Services not later than December 30, 2022, that evaluates the Marine Corps use of existing authorities to create a cyber auxiliary and applicability for each military service's requirements to achieve strategic objectives in cyberspace.

Cyber-Related Responsibilities of the Office of the Under Secretary of Defense for Acquisition and Sustainment

Cybersecurity has become a critical facet of all Department of Defense matters and especially in the context of acquisition of new systems, weapons, technologies, and assets for the warfighter. The Department of Defense depends upon the Defense Industrial Base (DIB) to provide these items. As such, the cybersecurity of the DIB must be resourced and invested to enable private industry to defend itself and its products. The committee has noted and continues to hold concerns about how the issue of DIB cybersecurity is managed across the Department and specifically across the Office of the Secretary of Defense, with multiple stakeholders and imprecise lines of responsibility between components including the Office of the Under Secretary of Defense for Policy, Office of the Under Secretary of Defense for Intelligence and Security, Office of the Under Secretary of Defense for Acquisition and Sustainment, and Office of the Chief Information Officer.

Rather than being the responsibility of any single stakeholder, the committee believes in the necessity for all components to play a role, so long as that role is clear to all involved. To ensure clarity and unity of effort, the committee directs the Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)) to provide a briefing to the House Committee on Armed Services not later than November 1, 2022, in which it articulates its role in DIB cybersecurity across the entirety of the organization, as well as the role played by the Office of the Assistant Secretary of Defense for Industrial Base Policy. Additionally, this briefing should present updates on the work of (OUSD(A&S)) in developing, assisting, and executing on the executive branch's wider effort related to Software Bill of Materials (SBOM).

Data Bus Cybersecurity

The committee is aware that the MQ-8 Fire Scout is a core effort for the United States Navy in the pursuit of effectively leveraging unmanned platforms in future warfighting and that the cybersecurity of the MQ-8 is essential in this effort.

Therefore, the committee directs the Chief of Naval Operations to submit a report to the House Committee on Armed Services not later than December 23, 2022, on potential cybersecurity threats to the MQ-8, the utilization and reliance on the Department of Defense Military Standard 1553, as well as potential mitigations currently and prospectively available to address any of the identified threats.

Defense Historical Records

The committee is encouraged by the recent efforts of the Army War College to modernize its military library holdings containing over 50 million valuable manuscripts, maps, and reports that date back to the mid-18th century. This extensive historical collection is of great interest to the public and digitization not only preserves the information but also provides public access. Historical materials, like those at the Army War College, are essential to an active civic society; however, the materials are only as useful as the infrastructure and architecture built to enable access to them.

Therefore, the committee recommends the U.S. Army Center of Military History, Air Force Historical Research Agency, Naval Heritage and History Command, and U.S. Marine Corps History Division develop requirements to provide public access to this information, including digital solutions. The committee directs the U.S. Army Chief of Military History, in coordination with the Directors of the Air Force Historical Research Agency, Naval Heritage and History Command, and U.S. Marine Corps History Division, to submit a report to the House Committee on Armed Services not later than August 1, 2023, on their digital strategy involving historical collections.

Foreign Partner Compliance with Cybersecurity Contract Clauses

The committee is aware that in March 2021, the United Kingdom (U.K.) Ministry of Defence issued an Industry Security Notice (ISN) 2021/03 with instructions for the U.K. defense supply base on how to address cybersecurity contractual requirements imposed by foreign governments. The Ministry of Defence is particularly concerned about requirements that subject the information systems and networks of U.K. defense contractors to access by foreign nations. The ISN focused on the network and data access requirements within the Defense Federal Acquisition Regulation Supplement (DFARS) 252.204-7012 (“Safeguarding Covered Defense Information and Cyber Incident Reporting”) and 252.204-7020 (“NIST SP 800-171 DOD Assessment Requirements”). Although the ISN does not explicitly direct U.K. defense contractors to reject these clauses, the committee understands that at least one U.K.-based contractor has been unwilling to accept the risk of compliance with the DFARS clauses, with immediate implications for the readiness of at least two critical Department of Defense programs.

The committee understands that the Under Secretary of Defense for Acquisition and Sustainment has recognized the near-term implications of the ISN and issued a class deviation for two Department of Defense programs on September 16, 2021. While the deviation was a positive step forward, the committee is concerned that the ISN has far greater implications and is already affecting other Department of Defense programs.

The committee is also concerned that the U.K. position could be adopted by other foreign partners. Therefore, the committee urges the Under Secretary of Defense for Acquisition and Sustainment to evaluate the applicability of class deviation for all relevant Department of Defense programs and to redouble efforts to engage with foreign partners on a permanent solution to issues where equivalency between respective cybersecurity requirements are needed.

The committee directs the Under Secretary of Defense for Acquisition and Sustainment, in coordination with the Department of Defense Chief Information Officer, to provide a briefing to the House Committee on Armed Services not later than December 23, 2022, on any actions taken to address the ISN, including any relevant class deviations, and an update on related engagements with the U.K. Ministry of Defence and other foreign partners.

Government Accountability Office Review of the Air Force’s Link 16 Cryptographic Modernization

The committee directs the Comptroller General of the United States to assess the Department of the Air Force’s Link 16 cryptographic modernization. The assessment shall review:

- (1) the status of the Air Force’s Link 16 cryptographic modernization;
- (2) challenges associated with the Air Force’s Link 16 cryptographic modernization;
- (3) potential options to accelerate the Air Force’s Link 16 cryptographic modernization capacity and timeline;

(4) what factors and decisions contributed to the current timeline for modernization;

(5) how the Air Force's efforts compare to the other services and their Link 16 cryptographic modernization; and

(6) any other matters the Comptroller General deems appropriate.

The committee further directs the Comptroller General to provide a briefing to the House Committee on Armed Services not later than March 31, 2023, on the Comptroller General's preliminary findings and present final results in a format and timeframe agreed to at the time of the briefing.

Management of Technology Matters within the Army Secretariat

Since the creation of a Chief Information Officer within the Department of the Army as a civilian position, the Army has benefited from the enterprise-wide approach that the position enables. This has resulted in tangible productivity and cost benefits for the military services. Within less than 2 years, all three military departments have established and maintained Chief Information Officers as senior civilians reporting to the military departments' Secretaries. However, unlike its counterparts, the committee understands that the Army's Chief Information Officer maintains responsibility for only a portion of information technology, with a separate category of "Defense Business Systems" and associated technologies managed by the Office of Business Transformation (OBT). This category includes programs such as the Integrated Pay and Personnel System-Army, Army Contract Writing System, and Accessions Information Environment. The committee notes that each of these programs is years behind schedule and grossly over budget. The committee remains concerned by the Army's approach that the technology underlying Defense Business Systems is distinct from the technology underlying the Army's enterprise systems.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the House Committee on Armed Services not later than December 23, 2022, to address the current division in responsibilities between the Chief Information Officer and the Director, OBT. This briefing should include reflections of an evaluation of the Department of the Navy's construct in which all technology responsibilities are made the responsibility of the Department of the Navy Chief Information Officer.

Report on Department of Defense Information Network Approved Products List Process

The committee recognizes the importance of ensuring products and support used as part of the Department of Defense Information Network (DODIN) are secure, trusted, and approved. The committee understands that the Defense Information Systems Agency (DISA) has initiated an assessment of the Approved Products List (APL) process to ensure that current procedures align with new and

evolving departmental priorities, while the Chief Information Officer is concurrently reviewing the DODIN APL waiver process.

The committee directs the Department of Defense Chief Information Officer, in coordination with the Director of DISA, to submit a report to the congressional defense committees not later than March 1, 2023, on the results of both the DODIN APL process assessment and proposed changes to the waiver process as well as recommendations on how to utilize both processes to increase the security, reliability, and trust of the Department of Defense Information Network.

Task Force 59 and Operationalizing Artificial Intelligence at Sea

The committee recognizes and commends Task Force 59 (TF-59), the Navy's first operational element dedicated to integration of and experimentation with artificial intelligence and unmanned technologies. Since its establishment in September 2021, TF-59 has not only demonstrated a value to its parent command, the United States Navy's Fifth Fleet, but also to the Navy and the Department of Defense writ large. In a short period, TF-59 has been highlighted multiple times in congressional testimony and public statements by leaders across the Department of Defense, to include the Secretary of the Navy, the Chief of Naval Operations, and the Commander of U.S. Central Command.

The committee believes that initiatives such as TF-59 are vital to ensuring that the military services are able to modernize and leverage critical technologies in potential future conflicts. The committee asserts that TF-59 should continue and expand its operations experimenting with new technologies, collaborating with international partners, and memorializing its efforts for use elsewhere in the Navy and the other military services. Moreover, the committee urges the Department of the Navy to fully resource TF-59, particularly when it is so frequently cited as a success by the Navy's leaders. Additionally, the Department of the Navy should explore opportunities to attach and embed technical personnel, to include Cyber Warfare Engineers, Information Professionals, and their enlisted counterparts, in order to build organic capability within TF-59.

Therefore, the committee directs the Chief of Naval Operations to provide a briefing to the House Committee on Armed Services not later than December 23, 2022, on TF-59. This briefing shall include details of TF-59's projected manning, fiscal year 2023 budget profile, estimates for funding over the Future Years Defense Program, and operational history. Additionally, the briefing shall detail how the structure and practices of TF-59 can be implemented at other regionally aligned fleets to the maximum extent practicable.