

### Appendix L.3: Section 805 Template Language for Chapter 4, Option 3

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This document is a template for the type of legislative language that could represent a new category/pathway to procure, develop, deploy, and continuously improve software for DoD applications. This template is designed to serve as an *example* of how the types of changes we envision might be implemented and has not been reviewed or endorsed by the Department. It is written to be consistent with 2016 NDAA Section 805 (Use of alternative acquisition paths to acquire critical national security capabilities).

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#### SEC. [???]. RAPID ACQUISITION OF EFFECTIVE DOD SOFTWARE.

(a) GUIDANCE REQUIRED.—Not later than [90, 180, 270] days after the date of the enactment of this Act, the [Under Secretary of Defense for Acquisition and Sustainment], in consultation with the [Comptroller of the Department of Defense] and the [Vice Chairman of the Joint Chiefs of Staff] shall establish guidance for the rapid acquisition of software systems.

(b) SOFTWARE ACQUISITION PATHWAYS.—The guidance required by subsection (a) shall:

- 1) provide for the use of proven technologies and solutions to continuously engineer and deliver capabilities in software. The objective of an acquisition program under this authority shall be to begin the engineering of new capabilities quickly, to demonstrate viability and effectiveness of those capabilities in operation, and continue updating and delivering new capabilities iteratively afterwards; and
- 2) cover the following two acquisition pathways:

(A) APPLICATIONS.—The applications software acquisition pathway shall provide for the use of rapid deployment of software running on commercial commodity hardware in data centers and/or deployed with US forces; and

(B) EMBEDDED SYSTEMS.—The embedded systems software acquisition pathway shall provide for the rapid continuous development, upgrade and insertion of software embedded in weapon systems after the initial deployment, update of software required to support hardware refresh, and development of software in a weapon system program.

(c) EXPEDITED PROCESS.--

(1) IN GENERAL.—The guidance required by subsection (a) shall provide for a streamlined and coordinated requirements, budget, and acquisition process that results in the rapid fielding of software, in a period of not more than [one year] from the time that the process is initiated. It shall also require the collection of data on the version fielded and continuous engagement with the users of that software, so as to enable engineering and delivery of additional versions in periods of not more than one year each. Programs that are subject to the guidance shall not be subject to the Joint Capabilities Integration and Development System Manual and Department of Defense Directive 5000.01, except to the extent specifically provided in the guidance.

(2) The software acquisition pathway guidance shall include a plan for—

(A) programs to be supported by an entity capable of regular automated testing of the code. This entity would be authorized to buy storage, bandwidth, and computing capability as a service or utility if required for implementation;

(B) the collection of testing data automatically from [entity specified in (A)] and using those data to drive program decisions and oversight reporting;

(C) DOT&E to participate with the acquisition team to design acceptance test cases that can be automated using the entity specified in (A) and regularly used to test the acceptability of the software as it is incrementally being engineered;

(D) programs to engage with the user community, and utilize user feedback in order to regularly define and prioritize the software requirements, as well as to evaluate the software capabilities acquired;

(E) close and regular interaction between government and contractor personnel, sufficient to allow the government to understand progress and quality of the software with greater fidelity than provided by formal but infrequent milestone reviews;

(F) an independent, non-advocate cost estimate to be done in parallel with engineering of the software. The process should revise current estimation models, which are based on source lines of code, and be more investment focused;

(G) the engineering of software to begin after the identification of (1) the warfighter or user need, (2) the rationale for how these software capabilities will support increased lethality and/or efficiency, and (3) the identification of a relevant user community;

(H) [desired features] to be specified, prioritized and further refined with the users once program execution has begun. Detailed requirements shall not be required for the

engineering of software capability to begin and should be expected to continuously evolve;

(I) demonstrating and evaluating the performance of fielded versions of the software capabilities in an operational environment;

(J) considering issues related to lifecycle costs and systems interoperability;

(K) addressing issues of logistics support in cases where the software developer may stop supporting the software program;

(L) establishing software performance metrics that can be generated on a [monthly, weekly, continuous] basis and made available throughout the Department of Defense and the congressional defense committees. Such metrics should address deployment rate and speed of delivery, response rate such as the speed of recovery from outages and cybersecurity vulnerabilities, and assessment and estimation of the size and complexity of software development effort. Such metrics should be generated automatically by the development, test and continued integration and deployment of capability tools used by the program and the actual fielded software;

(M) establishing a new pilot program to test a Defense Wide appropriation category of funding to provide flexibility to execute requirements with the speed and agility required to meet the rapid changes in information technology. This pilot funding appropriation category shall provide for a single two-year appropriation for lifecycle management of software-intensive and infrastructure technology capabilities. The objective of a single appropriation software pilot program would be to provide 1) greater focus on managed services versus disaggregated development efforts, 2) additional accountability and transparency for information centric and enabling technology capabilities, and 3) flexibility to pursue the most effective solution available at the time of acquisition; 4) much greater insight into the nature of software expenditures across the DOD enterprise; 5) an improved ability to measure costs and program performance;

(3) APPLICATIONS.—With respect to the Applications Pathway, the guidance shall include—

A) a preference for contracting or transactions that can be awarded within 90 days;

B) a mandate to implement the commercial item preference in 10 USC 2377;

C) a plan to maximize the use of the general solicitation competitive procedures authority in section 879 of the National Defense Authorization Act for Fiscal Year 2017;

D) a process to develop continuous opportunities for competition for replacement applications through such authorities as section 2359b of title 10, United States Code; and

E) a preference for contractor developed and financed applications solutions to be purchased as a service, on a subscription or on utility usage basis.

(4) EMBEDDED SYSTEMS.—With respect to the embedded systems pathway, the guidance shall include a plan to —

A) leverage where appropriate modular open system approaches as defined in subchapter 1 of 144B of title 10, United States Code;

B) incorporate lessons learned from the software pilot programs authorized in section 873 and 874 of the National Defense Authorization Act of 2018; and

C) consider where appropriate managing and budgeting for the continuous development, upgrade and insertion of software as a major modification and upgrade and as a major subprogram as defined in section 2430a of title 10 United States Code.

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(5) STREAMLINED PROCEDURES.—The guidance for the programs may provide for any of the following streamlined procedures:

(A) The service acquisition executive of the military department concerned shall appoint a program manager for such program from among candidates from among civilian employees or members of the Armed Forces who have significant and relevant experience in modern software methods.

(B) The program manager for each large software program shall report with respect to such program directly, and without intervening review or approval, to the service acquisition executive of the military department concerned.

(C) The service acquisition executive of the military department concerned shall evaluate the job performance of such manager on an annual basis. In conducting an evaluation under this paragraph, a service acquisition executive shall consider the extent to which the manager has achieved the objectives of the program for which the manager is responsible, including quality, timeliness, and cost objectives.

(D) The program manager of a defense streamlined program shall be authorized staff positions for a technical staff, including experts in software engineering to enable the manager to manage the program without the technical assistance of another organizational unit of an agency to the maximum extent practicable.

(E) The program manager of a defense streamlined program shall be authorized, in coordination with the users of the equipment and capability to be acquired and the test community, to make trade-offs among life-cycle costs, requirements, and schedules to meet the goals of the program.

(F) The service acquisition executive, acting in coordination with the defense acquisition executive, shall serve as the decision authority for the program.

(G) The program manager of a defense streamlined program shall be provided a process to expeditiously seek a waiver from Congress from any statutory or regulatory requirement that the program manager determines adds little or no value to the management of the program.

(d) SOFTWARE FUND.—

(1) IN GENERAL.—The Secretary of Defense shall establish a fund to be known as the [“Department of Defense Rapid Development of Effective Software Fund”] to provide funds, in addition to other funds that may be available for acquisition programs under the rapid software development pathways established pursuant to this section. The Fund shall be managed by a senior official of the Department of Defense designated by the [Under Secretary of Defense for Acquisition and Sustainment]. The Fund shall consist of amounts appropriated to the Fund and amounts credited to the Fund pursuant to section [???] of this Act.

(2) TRANSFER AUTHORITY.—Amounts available in the Fund may be transferred to a military department for the purpose of starting an acquisition program under the software acquisition pathway established pursuant to this section. These funds will be used to fund the first year of the software acquisition and provide the program an opportunity to field software capabilities that address newly discovered needs. A decision to continue the program on other funds will be made based upon the progress demonstrated after the first year. Any amount so transferred shall be credited to the account to which it is transferred. The transfer authority provided in this subsection is in addition to any other transfer authority available to the Department of Defense.

(3) CONGRESSIONAL NOTICE.—The senior official designated to manage the Fund shall notify the congressional defense committees of all transfers under paragraph (2). Each notification shall specify the amount transferred, the purpose of the transfer, and the total projected cost and funding based on the effort required each year to sustain the capability to which the funds were transferred. The senior official will also notify the congressional

defense committees at the end of the one-year timeframe and report on the fielded capabilities that were achieved. A notice under this paragraph shall be sufficient to fulfill any requirement to provide notification to Congress for a new start program.

(e) Definition of Major Defense Acquisition Program -- Section 2430 of title 10, United States Code, is amended at the end of paragraph 2 by striking “.” and adding “or the software acquisition applications or embedded systems pathways under section XXX of this title.”