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The Honorable William La Plante
USD(A&S)
1010 Defense Pentagon
Washington, DC 20301-1010

Subject: Software Acquisition Policy and Congressional Oversight Issues

Dear USD La Plante:

Both the Senate version of the passed NDAA for FY 2024 and a recent GAO report address software acquisition. The NDAA provision concerns Earned Value Management System (EVMS) requirements and the GAO recommendations concern Agile methods. Acquisition reform recommendations are provided below that will meet NDAA requirements, if it becomes law, and GAO recommendations.

Senate NDAA Provision

Senate NDAA provision, “Modifications to EVMS requirements” (Section (Sec.) 815), if it becomes law, would require an update to DFARS to exempt all software contracts and subcontracts from EVM requirements. The Senate’s legislative intent and action is not unexpected considering previous reports to the SASC and HASC, by DoD and the Sec. 809 Panel, that exposed the shortcomings of EVM.

Your SASC Nomination Hearing

The Senate’s intent is also revealed in the Advance Policy Questions (APQ) at your SASC nomination hearing. Two questions, regarding EVM and Agile development are relevant to my recommendations.

EVM

The preface to APQ 51 follows:

“The EVMS is used to assess the cost, schedule, and technical performance of major capability acquisitions for proactive course correction. However, the Sec. 809 Panel reported that EVM **does not measure product quality and concluded, “EVM has been required on most large software programs but has not prevented cost, schedule, or performance issues.”**

In 2009, DoD reported to the committee that **“a program could perform ahead of schedule and under cost according to EVM metrics but deliver a capability that is unusable by the customer”** and stated the program manager should ensure that the EVM process **measures the quality and technical maturity of technical work products instead of just the quantity of work performed.”**

APQ 51 was: “If confirmed, what steps would you take, if any, to require contractors to report valid measures of cost, schedule, and technical performance for all acquisition pathways?”

You answered: “If confirmed, I will work across the Department and with the industrial base— current and emerging—to validate, improve, **or establish appropriate metrics across the acquisition pathways**. I have no specific recommendations at this time. I plan to continue open communications to ensure transparency and allow individual programs to continually improve and tailor approaches to best meet the warfighter need.”

Agile Development Approaches Including Embedded Software

APQ 41 and your response follows:

41. To what extent do you believe DOD has broadly implemented commercial best practice agile development approaches adequately for software and hardware systems?

“I understand the DoD has made significant progress over the last several years to enable more modern software development and acquisition practices, policies, pilots, and training, with strong Congressional support. I also understand DoD has taken important steps such as issuing the new **Software Acquisition Pathway** which is purpose-built to implement **best commercial agile approaches** and enable modern software practices for **both applications and embedded software**. DoD is still in the early stages of effectively implementing agile and modern software approaches with progress in software intensive systems that can be leveraged for application to more of our hardware systems. If confirmed, software acquisition will be a high priority.”

GAO Recommendation

GAO issued DEFENSE SOFTWARE ACQUISITIONS Changes to Requirements, Oversight, and Tools Needed for Weapon Programs GAO-23-105867 July 2023. It included the following recommendation.

“Incorporate oversight of Agile development of software into acquisition policy and guidance for all programs using Agile. This should include use of metrics, including *outcome-based metrics*, and continually assessing the *value of capability delivered* to support iterative software development.” (Recommendation 2)

My Recommendations

In my opinion, the wording of NDAA Sec. 815 is ambiguous in that it cites “software contracts and subcontracts.” In implementing the DFARS changes, please ensure that

they are applicable to ***both applications and embedded software***. That would be consistent with your Senate testimony as well as with DoDI 5000.87 Operation of the Software Acquisition Pathway. Per DoDI 5000.87:

b. There are two paths within the software acquisition pathway: applications and embedded software. Except where specifically noted, the guidance in this issuance applies to both paths equally.

(1) The applications path provides for rapid development and deployment of software running on commercial hardware, including modified hardware, and cloud computing platforms.

(2) The embedded software path provides for the rapid development, deployment, and insertion of upgrades and improvements to software embedded in weapon systems and other military-unique hardware systems. The system in which the software is embedded could be acquired via other acquisition pathways (e.g., major capability acquisition).

Second, Table 3 of the white paper that was sent previously (*Integrating the Embedded Software Path, Model-Based Systems Engineering, MOSA, and Digital Engineering with Program Management*, July 22, 2023) includes proposed revisions to policy and guidance. The guidance includes *outcome-based* metrics, the *value of capability delivered*, and the technical work products that should be measured for their *quality and technical maturity*.

There will no longer be a DFARS requirement to measure the *quantity of work performed* to develop software. Of course, contractors may continue to voluntarily use EVM for software development if they believe the myth, promulgated by the *DoD EVMS Interpretation Guide*, that EVM is a “program management tool to provide joint situational awareness of program status and to assess the cost, schedule, and technical performance of programs for proactive course correction.”



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CC:

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