Common Sense Project Management: "When *you* come to a fork in the road…" —Paul Solomon 11/8/25

Note: This revision cites the *DOW Acquisition Transformation Strategy* (ATS) requirements to:

1. Measure progress and prove programs are on the right path by providing real-time and continuous access to program performance data.
2. Systems engineering focus on the design, integration, test, and management of systems.

Robert Frost: Two roads diverged in a wood, and I—

> I took the one less traveled by,
> And that has made all the difference.

It is time to fully de-regulate how DoD manages the acquisition of major weapon systems. The NDAA for FY 2025, the Defense Federal Acquisition Regulation Supplement, DFARS, requires contractors to be compliant with the Earned Value Management System (EVMS) Standard EIA-748 guidelines for only two acquisition paths and will provide a waiver for one of them. EVMS provides no management value. In fact, EVM status reports of cost and schedule progress are often based on botched (GAO-24-106546 Navy Frigate), misleading, or manipulated metrics. We don't need another regulation to replace the EVMS DFARS clause. Instead, we need program managers and contractors to use common sense project management and outcome-based metrics. They should be held accountable for the results.

Robert Frost's poem and the novel *Something of Value* provide insight for acquisition reform. *Something of Value* is the title of the book that is cited in the letter to HASC Vice Chair Wittman, Appendix 3, Subj: "Something of Value" not "Earned Value."

> Excerpt: "When we take away from a man his traditional way of life, his customs, his religion, we had better make certain to replace it with Something of Value." So, what do we do if we take away mandatory compliance with the Earned Value Management (EVM) Standard guidelines in EIA-748? Per the Section 809 Panel report, "traditional measurement using EVM provides less value to a program than an Agile process in which the end user continuously *verifies that the product meets the requirement*."

The NDAA for FY 2024 created a fork in the acquisition road. The *Final Report of the Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform* also points to that fork. I recommend taking the path that gives the warfighter and the taxpayer "Something of Value" instead of EV.

This paper advocates booting the requirement to use EVM and its associated, compliance reviews. Information includes:

1. Response to W. Abba article: *It's Time to "Reboot" EVM*
2. "When you come to a fork in the road, take it"
3. Something of Value to replace mandatory EV
4. Budgeting 101 and Scheduling 101
5. "The road less traveled by." Don't take it.
6. Former President Trump's 2018 President's Management Agenda (PMA)
7. Heritage Foundation's Project 2025 Report (Project 2025)
8. Sen. Ernst's letter to the Department of Government Efficiency (DOGE) with her ideas for trimming the fat and reducing red ink.
9. NDAA for FY 2025, Sections 804 and 805.10. EIA-748 is a not commercial standard and the use of a compliant EVMS cannot "assure the government that there is not fraud, waste, and abuse of contract funds," as falsely claimed by the NDIA.
10. *DCMA Insight*, 25th *Anniversary Issue*.
11. Secretary of Defense Hegseth's testimony at a House Appropriation Committee (HAC) hearing

12. Dept. of War (DOW) *Acquisition Transformation Strategy* (ATS)

This paper provides a lower cost, effective alternative to EIA-748. There will be no regulatory requirement for EVMS and no compliance reviews. Tear down that regulatory wall that is a barrier to competition for non-traditional, innovative companies. If contractors believe that it is cost-beneficial to use EVM, they may continue to use it and to maintain EIA-748. However, DoD should revise its policies and guides to focus on the **product** and technical performance, not on **work**. The revised policies and guides will be based on GAO guides, system engineering (SE) standards, Project Management Institute (PMI) standards and *PMBOK® Guide*. The government would provide incentives for program managers and contractors to achieve cost, schedule, and technical objectives but no subjective award fees just for using EVM in an "Excellent" manner.

Gen. Charles Q. Brown, Jr., Chairman of the Joint Chiefs of Staff stated in his paper, "Accelerate Change or Lose":

- DoD stakeholders, Congress, and traditional and emerging industry partners must work differently to streamline processes and incentivize intelligent risk-taking in support of the Warfighter and the Nation.
- We owe it to the American taxpayers to examine how we can provide greater value at an affordable cost to the Nation's defense.
- "Cost, schedule, and performance metrics alone are no longer sufficient metrics of acquisition success."

DoD reported in 2021: "Congress removed the burden of resource-heavy reporting requirements of EVM in pilots, resulting in greater focus on delivering working product and value over documentation."

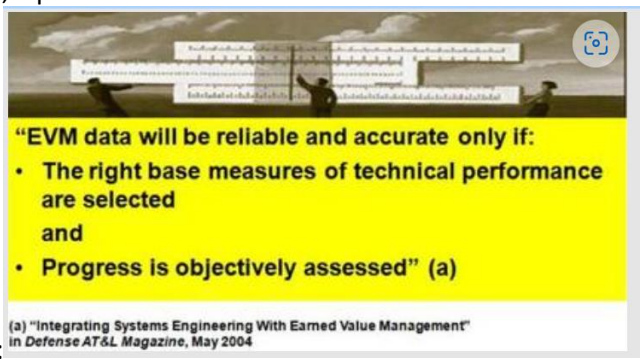
Neither GAO nor other independent reviewers have ever reported that contractors, who were certified as being compliant with the EIA-748 guidelines, had fewer and smaller cost overruns or schedule delays on major weapon systems development contracts.

Wayne Abba published two examples of the successful use of an EVMS in *Defense Acquisition Magazine*, March-April 2023**, "**It's Time to "Reboot" EVM." The article cited "the burdensome rules, regulations, documentation, and administration associated with DoD regulatory compliance." Neither case justifies retaining regulatory compliance.

In one case, EVM was applied to National Science Foundation major multi-user research *facility* projects. However, implementation and oversight is applicable by statute to "nonscientific and *nontechnical* aspects of project planning, budgeting, implementation, and management. In the other case, an Air Force development contract "did not require a DoD-compliant EVMS" (compliant with the EVMS standard EIA-748 guidelines).

EIA-748 Metrics Focus on the Wrong Thing and May be Misused

In 2004, I published an article in Defense AT&L entitled "Integrating Systems Engineering with EVM." Its message follows:



This message was finally incorporated by the PMI in *PMBOK® Guide* but is still being ignored by the NDIA. EIA-748 guidelines offer metrics that are distortionary or focus on the wrong things. EIA-748 focuses on the ***statement of work***

(SOW), not the **product scope**, the technical baseline, or the results to be achieved. Consequently, EIA-748 only provides guidance to measure the *quantity* of work completed, not the quality. It does not require using outcome-based measures. Many contractors that DCMA finds are compliant with the EIA-748 guidelines employ "vanity metrics."

In contrast, the *ANSI Standard for Project Management*, included as Part II of *PMBOK® Guide*, states "The success of the project is measured against the **project objectives and success criteria**."

PMBOK® Guide excerpts follow:

> **Vanity metric**: Shows data but does not provide useful information for making decisions.
>
> **Misusing the metrics**. There is the opportunity…to distort the measurements or focus on the wrong thing. Examples include:
>
> - Focusing on less important metrics rather than the metrics that matter most.
> - Focusing on performing well for the short- term measures at the expense of long-term metrics.

More information on *PMBOK® Guide* metrics is provided in Appendix 1.

Successful Prototyping Demonstrates Mature Technologies, Reduces Subsequent Risk

DoD policy, instructions, and guides permit the program manager to tailor the correct EVMS requirements for the specific nature of the program in accordance with DoD policy. Acquisition processes will be tailored based on the ***risk.*** (See Appendix 1 below, EVM Implementation Guide (EVMIG) and DoDD 5000.02).

Per DoDI 5000.85:

1. The acquisition pathway employed will be tailored for the unique *risk profile* of the capability being acquired.
2. A rapid, iterative approach…reduces cost, avoids technological obsolescence, and *reduces acquisition risk*. Consistent with that intent, acquisitions will rely on *mature, proven technologies and early testing.*
3. Technologies successfully demonstrated…via the Rapid Prototyping procedures in the Middle Tier Acquisition pathway, or other prototyping authorities, may be transitioned to major capability acquisition programs.

Consequently, a program manager of a major capability acquisition that has been transitioned from a prototype or prototypes with mature, proven technologies faces low technical risk. DoD policy should be revised to enable the program manager to tailor *out* the EVMS requirements and manage the product, not the EVM process. Conversely, a program manager should avoid the risk of program failure that is due to the procedural and cultural risks that are inherent when complying with EIA-748 guidelines. When EVM is not correctly implemented, status reports of cost and schedule progress are based on botched, misleading, or manipulated metrics which obscure situational awareness and delay timely corrective actions.

Also, it is recommended that program managers of acquisitions with *mature, proven technologies* avoid use of cost plus (subjective) award fee contracts. Use incentives. DoD should *Buy a Product that Works, not a Statement of Work.*

So, we don't need another assessment of the management value of EVM. "Just do it." Get rid of the statutory and regulatory requirements for EVM.

Other Reasons to Boot EIA-748

1. EIA-748 Not Widely Accepted as a Commercial Practice
    a. Despite the unsubstantiated claims in the *DoD EVMS Interpretation Guide* and the *NDIA EVMS Application Guide*, EIA-748 is not a widely accepted industry best practice that is used across the

commercial sector. Evidence is provided in the white paper, DOD Acquisition Reform: *EVMS-lite* and Integrated Program Management (*EVMS-lite)*.

2. Program Management Improvement and Accountability Act of 2016 (PMIAA)
    a. The PMIAA is not yet applicable to DoD. Congress should remove the exemption. *See EVMS-lite* and the November-December 2015 *Defense AT&L* article, "A Contract Requirements Rule for Program Managers (PM)." A PM's needs that are covered by the *PMBOK® Guide* but are not mentioned in EIA-748 include the technical or product baseline, requirements management and traceability, risk management, and project procurement management.
3. PMBOK® Guide includes standards and principles that meet the needs of IPM but are absent from EIA-748 or are enhancements that meet product or quality needs (Appendix 2).
4. GAO Report GAO-24-106886, the ISACA Capability Maturity Model® Integration (CMMI®) Model V3.0, contains the best leading practices for the following project management activities; requirements traceability, risk management activities, product integration, quantitative performance targets, verification, and validation. Appendix I is a table of the pertinent best project management leading practices to measure progress towards meeting technical performance requirements, verification and validation milestones, and the integration of hardware with embedded software. For more information about CMMI, please read my Carnegie Mellon U./Software Engineering Institute Technical Note CMU/SEI-2002-TN-016, Oct. 2002, "Using CMMI® to Improve Earned Value Management." Although written in 2002, it is relevant to today's digital engineering (DE) ecosystem. Just skip the obsolete sections regarding EVM.
5. DoD Should Boot EIA-748 because it is impractical, per OMB Circular A-119 criteria. See *EVMS-lite*.
    a. Excerpts:
    b. "Impractical" includes circumstances in which such use would fail to serve the agency's…program needs; be inadequate or be less useful than the use of another standard.
    c. EIA-748 is impractical based on the following evaluation factors in *OMB Circular A-119, Federal Participation in the Development and Use of VCSs and in Conformity Assessment Activities*:
6. The prevalence of the use of the standard in the national and international marketplaces.
7. The problems addressed by the standard and changes in the state of knowledge and technology since the standard was prepared or last revised.
    a. EIA-748 does not address the state of knowledge and technology since it was last revised. It is still silent on the product or technical baseline, risk management, and on tracing the requirements baseline to the schedule and work packages. The Quality Gap has not been closed.
8. The use of EIA-748 fails to serve DAS policy to "Employ Performance Based-Acquisition Strategies" that support an "acquisition approach structured around the ***results to be achieved*** as opposed to the manner by which the ***work*** is to be performed."
9. The use of a compliant EVMS cannot "assure the government that there is not fraud, waste, and abuse of contract funds," as falsely claimed by the NDIA. Evidence is provided in *EVMS-lite*.
10. SAE International was the accrediting body for EIA-748D and is now in the balloting process for draft EIA-748E. However, SAE's policies and procedures specify that a standard include specific performance requirements for quality and broadly accepted engineering practices or specifications. EIA-748E is void of these criteria. It was disapproved on the first ballot. See Appendix 9, Letter to Hon. USD (R&E) Emil Michael, Subj: Shortcomings of Draft SAE/EIA-748 E EVMS Standard, Part 2 dated August 23, 2025.

OPM/OMB Memo: PMIAA IPM Competencies

In 2019, OPM, in consultation with the OMB and the Program Management Policy Council, issued a memo which defined "IPM competencies to select, assess, and train program and project management talent for the 21st century." In August 2023, the memo was updated. Neither version includes EVM as a technical competency. Both versions included four technical competencies which are not covered in the EIA-748 guidelines:

- Quality Management - Knowledge of the principles, methods, and tools of quality assurance, quality control, and reliability used to ensure that a project, system, or product fulfills requirements and standards.
- Requirements Management - Knowledge of the principles and methods to identify, solicit, analyze, specify, design, and manage requirements.
- Risk Management - Knowledge of the principles, methods, and tools used for risk assessment and mitigation, including assessment of failures and their consequences.
- Scope Management - Knowledge of the strategies, techniques, and processes used to plan, monitor, and control project scope; includes collecting requirements, defining scope, creating a work breakdown structure, validating scope, and controlling scope to ensure project deliverables meet requirements.

National Defense Industrial Strategy

USD Kathleen Hicks stated, in the National Defense Industrial Strategy, "we need to shift ***from policies rooted in the 20th century*** that supported a narrow defense industrial base."

Space Acquisition Tenets

Frank Calvelli, Asst. Sec. of the Air Force for Space Acquisition and Integration, issued a SAF/SQ memo, Subj: Space Acquisition Tenets, dated 31 October 2022. Per the memo, "Our top three priorities include driving speed into our acquisitions in order to deliver new capabilities faster…Former approaches…that took many years to develop on cost plus contracts can no longer be the norm…and most importantly, delivering programs on cost and schedule through solid program management discipline and execution.

Tenet 8 is to "Hold industry accountable to execute on cost, schedule, and meeting performance commitments."

Tenet 9 is to "Proactively manage the program by continuing to actively trace schedule, cost, and technical progress. Identify issues early in order to quickly resolve them." Per the memo, "There is no better way to get speed into acquisitions than to deliver programs that meet performance requirements, on schedule and on cost. This is our ***most important tenet. Success is measured by executing on plan.***

These tenets are not tenable if program managers hold onto the EIA-748 guidelines. Those guidelines are *not* structured around the ***results to be achieved*** but focus on the ***quantity*** of ***work*** performed. EIA-748 thwarts proactive program management. Also, on cost plus award fee contracts, industry earns fees that are based on subjective criteria, not on objective measures of technical progress.

HASC Chairman Mike Rogers spoke at a celebration of the anniversary of the Space Force. He spoke about "endless cost plus development contracts" and the need to "increase competition" and "draw more non-traditional companies into the defense market."

Does the defense industry still support the status quo regarding the DFARS EVM clause and claim that compliance with the EIA-748 guidelines from 1967 is necessary for IPM?

"When You Come to a Fork in the Road…"

Yogi Berra said, "When you come to a fork in the road, take it." Sen. Patty Murray was the first to arrive at that fork. In 2009, she offered an amendment to the Weapon Systems Acquisition Reform Act (WSARA). Per her statement in the Congressional Record:

1. The GAO observed that contractor reporting on EVM often lacks consistency, leading to inaccurate data and faulty application of this metric.
2. This is a garbage-in/garbage-out problem that we need to correct.

3. This amendment…would help to strengthen the Department's acquisition planning, increase and improve program oversight, and help to prevent contracting waste, fraud, and mismanagement.

Per the 2009 DOD Report to Congress which was required by her legislation, "utility of EVM has declined to a level where it does not serve its *intended purpose*" and contractors "keep EVM metrics favorable and problems hidden."

The Section 809 Advisory Panel Report, in 2018, concluded "EVM has been required on most large software programs but has not prevented cost, schedule, or performance issues."

Fifteen years after Sen. Murray's statement, the Final Report of the Legislative Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform, March 6, 2024, states that EVM systems purport to assess expenditures against established delivery benchmarks but have long been criticized as ***easily manipulated and inadequate to the task***. The PBBE Report also called for metrics that provide information on the ***value received*** (Something of Value). The Commission stated that "the status quo is insufficient to the demands and realities of today's strategic and technological environment" and argued for a "Need for Change." The Final Report included Recommendation 7: Improve understanding of private sector practices.

Former President Trump's 2018 PMA included Cross-Agency Priority (CAP) Goal 11, Improve Management of Major Acquisitions. Per PMA, "Yet major acquisitions often fail to achieve their goals because many Federal managers lack the program management and acquisition skills required to successfully manage and integrate large and complex acquisitions into their projects. These shortcomings are compounded by complex acquisition rules that reward compliance over creativity and results."

The OMB Director Russ Vought is a co-author of Project 2025. Project 2025 stated "Senior acquisition leaders should design a system that allows decision-makers to stay within the law but bypass unnecessary departmental regulations that are not in the best interest of the government and hamper the acquisition of capabilities that warfighters require."

To implement changes needed by the PBBE Commission, President-elect Trump's 2018 PMA, and Project 2025, take the fork in the road to deregulate the mandatory use of EVM.

Schedule Performance is Paramount (GAO and Rand)

The path to effective IPM bypasses mandatory compliance with the EIA-748 guidelines. EVM itself is not necessary to provide program managers with early warning of developing trends. Per *GAO Cost*, "Typically, schedule variances are followed by cost variances and management tends to respond to schedule delays by adding more resources or authorizing overtime."

The GAO report, GAO-25-106749 Cruiser Modernization includes GAO's following assessment of the defense industry management value of the Integrated Master Schedule (IMS) .

Acquisition planning tool	Description	Impact of not using acquisition planning tool
Integrated Master Schedule	An integrated and reliable schedule can realistically reflect changes, show when major events are expected, and show the completion dates for all activities leading up to them. This can help determine if the program's parameters are realistic and achievable.	Given the $3.7 billion cost of this effort, a master schedule could have been developed to integrate various types of work (e.g., modernization periods and maintenance periods). A master schedule would also have enabled the Navy to manage the critical work necessary to achieve the cruiser modernization effort and make decisions to remove some work from the scope when it was clear that the efforts were going much longer than planned. A master schedule would have also provided the means to gauge progress, identify and resolve potential problems, and promote accountability at all levels of the program. Without such a schedule, the Navy was unable to adjust to changes from the planned schedule without significant delays.

Source: GAO analysis of Department of Defense (DOD) Instruction 5000.85, and Navy Instruction 5000.2G, and Navy data. | GAO-25-106749

The IMS was one of four key contract oversight tools cited in the report. EVM was conspicuously not one of those tools. Per the report, the IMS provides "the means to gauge progress, identify and resolve potential problems, and promote accountability at all levels of the program."

All stakeholders will benefit when program managers get "early warning of developing trends—-both problems and opportunities—-allowing them to focus on the most critical issues." However, EVM is not a prerequisite to getting early warning.

The Rand Corp. report, *On the Use of Digital Engineering (DE) Artifacts for Integrating Processes in Acquisition Programs, Observations from the Sentinel Program and Recommendations for Future Programs*, printed December 31, 2024, examines an ongoing application of DE artifacts on the LGM-35A Sentinel weapon system. Excerpt:

Use DE artifacts to consolidate activities. The resulting vision included the development of a shared DE environment (DEE) based on MBSE. The objective of the DEE is to support digital analysis, standardize data and provide Authoritative Statements of Truth (ASoT), ***track task progress***, enable efficiencies, identify risks, and enhance critical communications among key process stakeholders.

Incentives

DoD should revise policy and guides to provide incentives for program managers and contractors to utilize best practices from GAO Guides, PMI standards and guides, SE standards, and other DE guidance. The selected best practices comprise Something of Value. My recommendations to close the Quality Gap and to provide greater value at an affordable cost to the Nation's defense are included herein and, in the white paper, "*Integrating the Embedded Software Path, Model-Based SE, MOSA, and DE with Program Management* (*Embedded SW*)."

DoD should also remove the counter-productive qualitative award fee criteria in the DoD EVM Implementation Guide such as "Contractor proactively and innovatively uses EVM. Contractor plans and implements continuous performance improvement in using EVM." Much time has been wasted by program managers, IPT leaders, and finance staff in the preparation of alleged evidence of excellence.

How can the program manager obtain valid, reliable measurement of the quality and technical maturity of technical work products? A contractor may be compliant with EIA-748 guidelines and choose not to use technical performance measures (TPM) as base measures of EV. The Quality Gap is enabled and sustained by the *NDIA EVMS Intent Guide.* Guideline 7, Identify Products and Milestones for Progress Assessment, differentiates quality from quantity:

> "The purpose for identifying objective indicators is to provide a means to measure the *quantity* of work accomplished – the earned value…Performance measures are one aspect of an IPM system as *other* processes control the quality and technical content of the work performed."

There will be a federal workforce reduction by eliminating EVM specialists. However, if something of value were to replace earned value, some of the specialists should be retrained in systems engineering (SE) skills and used to advise program teams and provide independent analysis. The specialists should verify requirements decomposition and traceability to the IMS. Then they should understand, verify, reconcile, and explain technical performance vs. reported schedule performance.

Today, those highly skilled EVM specialists waste time and money reviewing data anomalies in contractually required, automated "Defense Contract Management Agency (DCMA) EVMS Compliance Metrics (DECM)." DECMs provide answers to *process* questions that are not useful to the program manager. They include:

- Does Budget at Completion within the EV Cost Tool reconcile to the Work Authorization Document?
- Are required variance analysis reports being generated that exceed established internal thresholds?
- Are retroactive changes being made to the actual costs of work performed?

DCMA EVM specialists also waste time when analyzing or developing Cost Performance Index (CPI) Estimates at Completion (CPIEAC) even though the cost performance is based on BCWP that can obscure, not spotlight, real schedule progress. Overstated BCWP results in understated EAC. Instead of wasting money on labor and software licenses for DECM, DCMA should employ these specialists to focus on tasks that really help program teams. They should focus on issues and risks related to completing the product, not on the EVM process and metrics.

At a HAC hearing, Secretary of Defense Hegseth described the workforce acceleration and recapitalization initiative. "We are re-evaluating every position to make sure that each focuses on our core mission of supporting our warfighters. Reorganization plans will strip away bureaucracy, accelerate decision-making, and deliver maximum value to the warfighters. We will eliminate non-essential and redundant roles, consolidate functions, flatten hierarchies, and eliminate unnecessary vestiges of the past." In my opinion, EVM specialists are non-essential. They review compliance with the EIA-748 guidelines which are unnecessary vestiges of the past (1967).

The largest source of cost reductions will not be the reduction of DoD workers. The biggest cost savings will come from reducing contractor EVM specialists, consultants, and EVM software licenses. Most importantly, DoD and contractor program managers and engineers will no longer waste time on EVM tasks and will focus on the product.

DCMA Gets it "Right" on Quality

The DCMA publication, *DCMA Insight*, 25th *Anniversary Issue*, includes articles by two quality assurance (QA) engineers. They got it right on Quality:

> "We accomplish this by…working with the contractor to provide a quality product to the warfighter and relevant acquisition insight to the buying commands and the program executive offices."
>
> "the agency began aligning itself with industry wide standards like *ISO 9001* (Quality management systems-Requirements)…rather than maintaining its *own government-specific standards*. This change simplified the requirements for contractors and allowed them to compete more effectively in the global marketplace."

Unfortunately, DCMA's right hand, (EVM specialists or cost engineers), doesn't know what its left hand (QA engineers) is doing. The EVM specialists assess contractor compliance with the ***process*** per the de facto government-specific standard for project management, *NDIA EIA-748,* instead of on the quality of the ***product***. PMI's Common Sense Project Management standards and guides focus on project success, based on the ***product***.

Budgeting 101, Scheduling 101, and Common Sense Project Management

Sen**.** Joni Ernst, on the SASC, sent a letter to DOGE, dated November 25, 2024, with her ideas for trimming the fat and reducing red ink. Excerpts from her letter follow:

> While you're seeking "super high-IQ small-government revolutionaries" for "unglamorous cost-cutting," all that's really needed is a little common sense.
>
> To give you a head start, here are a trillion dollars' worth of ideas for trimming the fat and reducing red ink:
>
> **Require Commonsense Project Management Principles**
>
> For every $1 billion Washington spends, $102 million is wasted as projects go over budget, are delayed, or fail to meet projected goals. Implementing the most basic management systems—like establishing scopes and goals—could have saved taxpayers $688.5 billion from the $6.75 trillion the federal government spent this past year.

My solution to Sen. Ernst's requirement follows:

> Keep it cheap and simple. Don't bother computing EV (BCWP) and trying to explain the derived, budget-based schedule variance. Go back to Budgeting 101 and Scheduling 101. Compare cumulative actual costs to budget

(ACWP – BCWS). Then analyze. If there is an *apparent* cost overrun, is it real? Or are you just ahead of schedule? If there is an apparent cost underrun, are you behind schedule? Why? Are you under your hiring plan? Is development or testing by a subcontractor behind schedule and on the critical path? What's needed is thorough root cause analysis, identifying corrective actions and risks, and estimating realistic completion dates and costs.

I proposed statutory/regulatory solutions to Sen. Ernst in 2018. The revised version is my letter, Subj: Proposed NDAA Markups to Fix the PMIAA; Delete "shall not apply to DoD," dated July 7, 2021 (Appendix 5). Implementation of the recommendations could have provided common sense project management of DoD major acquisitions years ago. However, I am grateful to Sen. Ernst for prodding Mr. Musk and Mr. Ramaswamy to act on them now.

EIA-748 vs. ANSI/PMI 19-006-2019 The Standard for EVM plus *PMBOK® Guide*

Until the EVMS regulation is revoked, a DoD program manager must still use it for the Major Capability Acquisition path. The only standard that meets the needs of NDIS and the OMB Circular A-119 criteria is ANSI/PMI 19-006-2019, The Standard for EVM (PMI EVM Standard) in conjunction with *PMBOK® Guide.* Some of the program and project management components of *PMI EVM Standard* and *PMBOK® Guide* that are missing from the EIA-748 guidelines are product scope, risk management, and configuration management. Appendix 2 includes excerpts from *PMI EVM Standard* and *PMBOK® Guide.*

NDAA for FY 2025, Sec. 804 and 805: EVM not Required for Paths other than Major Capability Acquisitions

The NDAA for FY 2025 removes the regulatory requirement for contractors to comply with the EIA-748 guidelines (with one major exception and one detour).

Software Acquisition

SEC. 805. REVISION AND CODIFICATION OF SOFTWARE ACQUISITION PATHWAYS, provides that software acquisition and development pathways "shall **not be treated** as a major defense acquisition program for purposes of section 4201 of title 10, United States Code, or Department of Defense Directive 5000.01 without the specific designation of such software and covered hardware by the Under Secretary of Defense for Acquisition and Sustainment or a service acquisition executive." (Therefore, no EVM).

Middle Tier

SEC. 804. MIDDLE TIER OF ACQUISITION (MTA) FOR RAPID PROTOTYPING AND RAPID FIELDING, provides a detoured path for a program manager to seek a waiver from the regulatory requirement to use EVM. The excerpt from Sec. 804 follows:

(2) RAPID ACQUISITION PATHWAY DEFINED.—

In this section, the term 'rapid acquisition pathway means the rapid prototyping or the rapid fielding acquisition pathway.

''(4) STREAMLINED PROCEDURES.—The process described in paragraph (1) may provide for any of the following streamlined procedures:

''(E) A program manager appointed…may seek an expedited waiver from any regulatory requirement, or in the case of a statutory requirement, a waiver from Congress, that the program manager determines ***adds cost, schedule, or performance delays with little or no value to the management of such program or project.***"

The DFARS EVMS clause meets the waiver criteria, as disclosed above and in the white paper, Integrating the Embedded Software Path, Model-Based Systems Engineering, MOSA, and Digital Engineering with Program Management. So, a

program manager using the rapid acquisition pathway should select material in the two white papers to justify the waiver. (Seek the waiver)

Remove Major Exception: Major Capability Acquisition

That leaves one major exception. Program managers using the Major Capability Acquisition path are still stuck with the DFARS EVMS clause. However, the DFARS EVMS clause is inconsistent with DODI 5000.97 DE, DODI 5000.87 Operation of the Software Acquisition Pathway, and the Musk Five-step Engineering Algorithm.

DODI 5000.97

> It is policy in DODI 5000.97 that DoD will conduct a comprehensive engineering program for defense systems, pursuant to DoD Instruction (DoDI) 5000.88. In support of that effort, the DoD will use DE methodologies, technologies, and practices across the life cycle of defense acquisition programs…engineering, and management activities. The digital thread allows different audiences with different perspectives to extract data from and adjust usage of models to carry out different activities, including, but not limited cost estimating. Common examples of digital artifacts include schedules.

DODI 5000.87

> 3b(11) Each program will develop and track a set of metrics to assess and manage the performance, progress, speed, cybersecurity, and quality of the software development, its development teams, and ability to meet users' needs. Metrics collection will leverage *automated tools* to the maximum extent practicable. The program will continue to update its cost estimates and cost and software data reporting from the planning phase throughout the execution phase.

Musk's Five-step Engineering Algorithm for Major Capability Acquisitions

> Program Managers will be unable to use the digital thread to automate transformation of schedule performance data based on ASoTs unless the EIA-748 burden is removed. Per the *DoD DE Strategy* (DE Strat), "Exchange of information between technical disciplines or organizations should take place via model exchanges and ***automated transformations***." The Trump nominees to DoD are likely to employ Elon Musk's Five-step Engineering algorithm. The fifth step is "Automate."

In a DE environment, products are model-driven, providing additional opportunities to cost-effectively incorporate changes to digital models that are directly traceable to the implemented and tested work products, some of which can be automatically generated.

Barrier to Entry: Do You Really Want to Bid if there are EVMS Solicitation Clauses?

Per the National Defense Industrial Strategy Implementation Plan, a desired outcome is to streamline the acquisition process. Flexible acquisition authorities and pathways, such as…MTAs can reduce bureaucratic hurdles and enhance the speed and flexibility of contracting, allowing the DoD to engage more effectively with nontraditional defense contractors, academic institutions, and small businesses. By facilitating rapid prototyping and fielding of mature technologies, these streamlined processes ensure that innovative solutions may be developed and delivered much faster than through more traditional approaches. This also helps broaden the defense industrial base, ultimately enhancing DoD's ability to maintain a technological edge and respond swiftly to emerging challenges.

The Section 809 Panel Report states "the DoD contract compliance oversight process is one of the barriers to entry into the DoD marketplace because DoD's oversight process is not always timely, efficient, or effective. Stakeholders argue that the costs of DoD's compliance process outweigh the benefits the government attains." Per the Report, remove barriers to entry for "firms DoD seeks to leverage to ensure technological dominance and enhanced lethality across the

joint force inside the curve of near-peer competitors and nonstate actors." Although the Report referred to DoD's financial and business system oversight functions, its conclusions are applicable to program management system functions.

If you are a nontraditional, potential bidder for a contract that includes the EVMS solicitation clauses, a guide to EVMS is provided in Appendix 6, Guide to Guides for Implementing EVM in Compliance with NDIA EVM Standard EIA-748. Appendix 6 cites ten guides from DoD and the NDIA Integrated Program Management Division. There are 918 pages of guidance.

If you want to use an EVMS consultant to learn how to implement EVM in compliance with EIA-748, you can hire one or buy an excellent book from one that has 416 pages.

A sample of some of the incomprehensible or absurd excerpts from Appendix 6 includes:

- Reconcile the project value (target cost plus authorized, unpriced work) with the sum of all control account budgets, indirect budgets, management reserves, and undistributed budgets.
- This identifying threshold looks for tasks in a schedule (formal or informal) that have already begun but that have a Percent (%) Complete value that is 0% or has any inconsistencies when compared to the approved schedule.
- The training for Senior Executive Leadership would include the following skills: Overview of schedule analysis and metrics …including: … Schedule Performance Index (SPI), Duration-Based vs. Scope-Based % Complete.
- Successful EVMS Surveillance Programs…a robust surveillance plan that could be executed both internally and for oversight of subcontractors…provide customers and organizations with EVMS oversight responsibility a framework that can…be used to conduct surveillance of suppliers.
- When incentives are used in this way, it is possible – indeed likely – that a project could overrun a flexibly-priced contract, incurring a reduction in profit, while at the same time earning a maximum award fee for having submitted timely, reliable, and actionable program management information.

Do Senior Executive Leaders need skills such as Duration-Based vs. Scope-Based % Complete? Do cost engineers need to reconcile target cost plus authorized, unpriced work with the sum of other budgets? Would Senior Executive Leaders and taxpayers be better off if there were more real engineers and less cost or financial engineers?

Do potential bidders want to put up with DCMA compliance reviews? Per DCMA Business Practice 4, EVMS Surveillance, "An analysis of the contractor's EVMS processes and data will be conducted to evaluate the ability of the system to meet the intent of the EVMS EIA Standard. When available, the data analysis should include reviewing reports and findings from the contractor's internal surveillance activities.

Whether you are a senior executive or a real engineer, wouldn't you rather build a product that works and not waste time on reporting cost and schedule performance towards completing the quantity of work in your SOW? Reports that have been justly criticized as being based on botched, misleading, or manipulated metrics instead of outcome-based metrics?

DOW Acquisition Transformation Strategy (ATS)

The DOW ATS was issued November 7. 2025. It includes requirements to

1. Use data-driven acquisition to measure progress and prove programs are on the right path by providing real-time and continuous access to program performance data.
2. Use systems engineering to focus on the design, integration, test, and management of systems.

ATS Excerpts:

- Leverage existing authoritative data sources, including contractor data and automated reporting mechanisms to assess program performance.

- Ensure reported metrics appropriately convey program health, status, ongoing or anticipated issues, risks, and actions required to address possible causes for delay
- Correct data is collected and assessed for informed decision making and that the metrics being tracked are outcome focused.
- Proper use of digital threads and the ability to use real-time data to inform decision-making.
- Ensure the reporting process is not overly burdensome.

DoD, OMB, and GAO implementation plan:

To remove the EIA-748 burden, enable consistency between conflicting DoD instructions, reduce acquisition costs, and speed up delivery of the product, implement the following acquisition reform plan.

Step 1: DoD actions:

- DoD revise policies, guidance, and instructions to document evidence that PMIAA is applicable to DoD because DoD's program and project management policies, procedures, and guides are consistent with the best practices in widely accepted standards for program and project management planning and delivery, including GAO Guides, PMI standards, and *PMBOK® Guide*. Appendices 1 and 2 include best practices that should be included in Something of Value.
- DoD request to OMB, through the NIST, that EIA-748 be replaced by program and project management policies, procedures, and guides that are consistent with ANSI standards for program and project management planning and delivery, including PMI standards.
- DCMA discontinue EVMS compliance reviews and the DECM.

Transform EVM specialists into Engineering and Technical Management (ETM) practitioners. Team them with SE experts to focus on the developing product and risks to program success, not on EVM compliance. Recommended ETM Certification Standards Courses are in Appendix 8, Resurrecting EVM Specialists as ETM Practitioners. If a program manager chooses to use EVM, the transformed personnel can assist in identifying and scheduling the digital artifacts to be used as base measures of EV. The transformed personnel will provide management value by identifying and scheduling the digital artifacts needed to measure schedule and technical performance and by verifying requirements traceability from the technical baseline to those digital artifacts in the Integrated Master Schedule. If a program manager uses outcome based EVM, the transformed personnel can best identify which artifacts should be base measures of EV.

- Make the Integrated Master Plan (IMP) and SE Management Plan (SEMP) contractual requirements.
- Obtain statutory authority to eliminate the DFARS EVMS clause.
- Update the DOD Chief Digital and Artificial Intelligence (AI) Officer's (CDAO) Chartering Directive to include a path forward for Advana and Maven Smart Systems that details platform transition considerations to add capabilities, output-based metrics, and digital artifacts cited in the two Defense Acquisition Magazine articles that I authored:
  1. Better Program Management Through DE, May/June 2022
  2. Better Program Management Through DE Updated, July/August 2025.

Step 2: GAO actions:

- As required by PMIAA, examine the effectiveness of the following on improving Federal program and project management: (1) The standards, policies, and guidelines for IPM issued under section 503(c) of title 31, United States Code, as added by subsection (a)(1).
- Include the results of its examinations in its "GAO Report on Effectiveness of Policies on Program and Project Management," in conjunction with the High Risk list.
- Revise *Agile Guide* to add MVCR and MVP as shown Appendix 1, Chapter 4, Figure 4
- Revise *Schedule Guide* to close the Quality Gap and conform to the other GAO *Guides* (Cost Estimating and Agile).

Step 3: OMB approve DoD request to remove references to EIA-748 and revise *Capital Programming Guide* to discontinue the use of EIA-748 and replace it with Common Sense Project Management.

Step 4: DoD establish a strategic plan for IPM that is consistent with PMIAA and OMB objectives and leads to use of standards and policies that are in accordance with *PMBOK® Guide, ANSI/PMI 19-006-2019, GAO Guides,* and SE standards.

Employ DoD DE Strategy to Lower Costs, Close the Quality Gap

Appendix 1 cites the DoD DE Strategy, June 2018 (DE Strat). Employment of DE Strat will lower costs and close the Quality Gap by providing a pathway to automatic transfer of schedule performance information from the completed digital artifacts in the engineering model to the EVM data base instead of the manual entry of estimated percent complete of the work. The use of completed digital artifacts as base measures of schedule performance will also provide valid, reliable information for decision making instead of misleading information when estimated percent complete is based on "objective indicators" that are not consistent with meeting the requirements, technical performance, rework, and technical debt.

GAO best practices include similar guidance. Per *GAO Agile*, "Enable contract oversight through data from the program's Agile artifacts." Additional information is provided in *Embedded Software.*

Cheap EV for DE

Program managers may choose to add the tool, EVM, to their DE ecosystem without costly, burdensome regulatory requirements and DCMA compliance reviews. EV should be based on digital artifacts in the IMS, especially those on the critical path. Just describe the process and metrics in the SEP and SEMP. Select significant digital artifacts from the DE ecosystem for inclusion in the IMS, assign start and completion dates to those artifacts, and base earned value on the percent of actual vs. planned completion of those artifacts. My white paper, *Integrating the Embedded Software Path, Model-Based Systems Engineering, MOSA, and Digital Engineering with Program Management*, includes typical digital artifacts in the appendices.

Conclusion

DoD and OMB should sunset the use of EIA-748 and train program managers to use common sense project management. Then hold the program managers and contractors accountable for results. EIA-748 is impractical and ineffective. It fails to serve OMB and DoD's procurement and IPM needs. It is not an ANSI standard or even a widely accepted, commercial industry practice. It has failed to keep current with changes in the state of knowledge and technology and is less useful than the *PMBOK® Guide*. It does not assure the government that there is not fraud, waste, and abuse of contract funds. It inhibits the use of DE.

The end of the path should be a set of best practices and processes for IPM, Common Sense Project Management.

Today, the pairing of cost-plus contracts and EIA-748 enables traditional contractors to earn fees without being held accountable for results. Also, the EVMS clause is a barrier to entry to non-traditional contractors. At the HAC hearing, Secretary of Defense Hegseth said, "New entrants encounter numerous barriers to entry, including heavy regulations and scrutiny (compliance reviews)– I look forward to working with Congress to roll back unnecessary red tape to reinvigorate our Defense Industrial Base."

We need policies and processes to **Buy Products that Work, not Statements 0f Work**."

The letter to HASC Vice Chair Robert J. Wittman (Appendix 3) says it succinctly. The subject is "More Lessons Learned: "Earned Value? We don't need no stinking Earned Value." We don't need more evaluations either. Take the path less traveled by (by commercial enterprises), the path without mandatory earned value.

The Hon. Sen. Roger Wicker, Chairman, SASC, issued a report, ***Restoring Freedom's Forge*.** He proposed a five-part plan for driving efficiency into weapon systems acquisition. I proposed solutions that addressed two parts of his plan, Cut Red Tape and Enable Decisive Action, in a letter, Subj: Recommendations to *Restore Freedom's Forge.* (Appendix 7). This white paper is part of the solution.

EIA-748 includes a false claim, "The EVMS guidelines incorporate best business practices to provide strong benefits for program enterprise planning and control." If compliance with those archaic, ambiguous guidelines is so beneficial, then we don't need a regulation. Defense contractors, "just do it." You will get reimbursed for the costs of EVM, even if it is counterproductive. If a program manager chooses to use EVM as an analytical tool, base EV on the completed digital artifacts in the IMS.

Finally, **Common Sense Project Management** can lead to success. It supports the following:

- **Space Acquisition Tenet 9**: There is no better way to get speed into acquisitions than to deliver programs that meet performance requirements, on schedule and on cost. This is our ***most important tenet. Success is measured by executing on plan.***
- **PMI:** "The **success** of the project is measured against the **project objectives and success criteria**."

Note: All references are available at www.pb-ev.com.

Appendix 1

Appendix 1 Elements of GAO Guides, PMBOK, and Adaptive Acquisition Framework (AAF) Policies to Be Included in Something of Value		
GAO or AAF Document	**Section**	**Excerpt** **Note: (parenthesized comments are not in document)**
GAO Agile	Chapter 5	..in Agile development, the term requirement is rarely used. Instead, it is replaced with terms such as 'epic' or 'user story' and often represents a capability, feature, sub-feature, or more granular expectation for the system being developed. This guide considers both product backlog items and user stories to be a form of requirements. The following best practices will be discussed in this chapter: • Elicit and prioritize requirements. • Refine requirements. • Ensure requirements are complete, feasible, and verifiable. • Balance customer and user needs and constraints. • Test and validate the system as it is being developed. • Manage and refine requirements. • Maintain traceability in requirements decomposition. • Ensure work is contributing to the completion of requirements.
GAO Agile	Chapter 4, Figure 4 (revised by author per Note) >	Agile programs typically use five levels of planning to progressively define work, as illustrated in Figure 4. Note: (The GAO Agile Assessment Guide shows five levels of planning. The revised Figure 4 below includes two additional levels, the MVCR and the MVP. The MVP is discussed elsewhere in the GAO Agile Assessment Guide).

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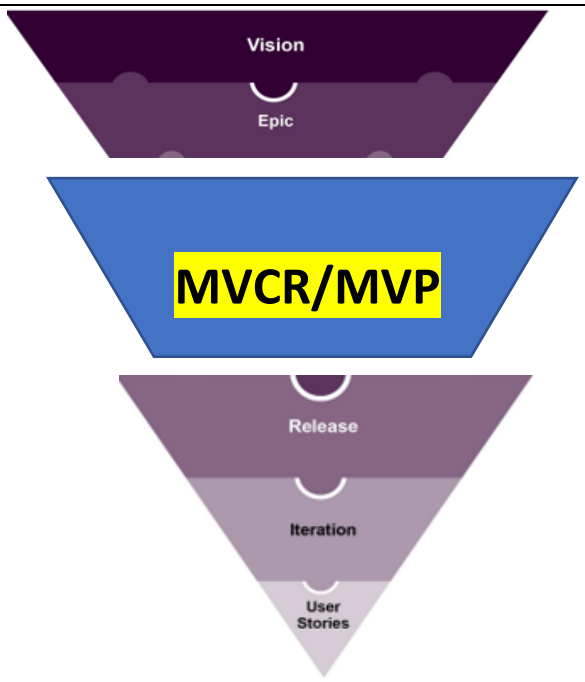
GAO or AAF Document	**Section**	**Excerpt** **Note: (parenthesized comments are not in document)**
		
GAO Agile	Chapter 7	EVM is effective for Agile programs when it is integrated with technical performance and EVM processes are augmented with a rigorous SE process
GAO Agile	Chapter 7	It is a best practice, though, to ensure the customer and product owner are communicating on priorities and the balance between scope, schedule, and budget so that MVP functionality requirements are met.
GAO Cost	Chapter 7 WBS	Step 4 Because a product-oriented WBS reflects cost, schedule, and technical performance on specific portions of a program, it represents a cost estimating best practice.
GAO Cost	Chapter 7 WBS	Table 4: Typical Technical Baseline Elements Detailed technical system and performance characteristics Includes key functional requirements and performance characteristics; descriptions of hardware and software components (including interactions, technical maturity of critical components, and standards); system architecture and equipment configurations (including how the program will interface with other systems); key performance parameters;
GAO Agile	Chapter 6	Enable contract oversight through data from the program's Agile artifacts.
GAO Cost	Chapter 18 EVM Process	Determine which performance measures will be used to objectively determine when work is completed. These measures are used to report

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		progress in achieving milestones and should be integrated with technical performance measures. Progress and milestone events should represent measurable performance in terms of quality and technical performance as well as cost and schedule. Measures used to report progress in achieving milestones should be integrated with technical performance measures. Management should use the EVM data captured by the CPR data to integrate cost and schedule performance data with technical performance measures
GAO Cost	Chapter 19 EVM Execution	Schedule variances are usually followed by cost variances, because as schedule increases various costs such as labor, rented tools, and facilities increase. …Additionally, management tends to respond to schedule delays by adding more resources or authorizing overtime.
DoDD 5000.01	1.2.a	Deliver Performance at the Speed of Relevance.
DoDD 5000.01	1.2.a.(1)(e)	Actively Manage Risk.
DoDD 5000.01	1.2.g.	Employ a Disciplined Approach.
DoDD 5000.01	1.2.g.(2)	Program goals for cost, schedule, and **performance parameters** (or alternative quantitative management controls) **will** describe the program over its life cycle. Approved program baseline parameters **will** serve as control objectives. Deviations from approved acquisition program baseline parameters and exit criteria will be documented, recorded, and reported to the Milestone Decision Authority (MDA) or Decision Authority.
DoDD 5000.01	1.2.k	Employ Performance Based-Acquisition Strategies. "Performance-based strategy" means a strategy that supports an acquisition approach structured around the ***results to be achieved*** (technical baseline or product scope) as opposed to the manner by which the ***work*** is to be performed (statement of work).
DoDD 5000.02	4.1.b.(6)	Establish a risk management program to ensure program cost, schedule, and performance objectives are achieved, and to communicate the process for managing program uncertainty.
DoDD 5000.02	4.2c(2)	Acquisition and product support processes, reviews, and documentation will be tailored based on the program size, complexity, ***risk***, urgency, and other complex acquisitions.

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GAO or AAF Document	**Section**	**Excerpt** **Note: (parenthesized comments are not in document)**
DoDI 5000.85	1.2b.(2)	To achieve that objective, the DoD will employ an adaptive acquisition framework comprised of acquisition pathways, each tailored for the unique characteristics and risk profile of the capability being acquired.
DoDI 5000.85	3.1a.(1)	A rapid, iterative approach to capability development reduces cost, avoids technological obsolescence, and *reduces acquisition risk*. Consistent with that intent, acquisitions will rely on *mature, proven technologies and early testing.*
DoDI 5000.85	3.2.c	Technologies successfully demonstrated in an operational environment via the Rapid Prototyping procedures in the Middle Tier Acquisition pathway, or other prototyping authorities, may be transitioned to major capability acquisition programs.
DoDI 5000.87	3.3.b(2)	Programs will…actively manage technical debt.
DoDI 5000.87	3.3.b(3)	The sponsor and program office will develop and maintain a product roadmap to plan regular and iterative deliveries of software capabilities. Develop and maintain program backlogs that identify detailed user needs in prioritized lists.
DoDI 5000.88	3.4 Program Technical Planning and Management a. Systems Engineering Plan	(3) For MDAPs, ACAT II, and ACAT III programs, the SEP will contain these elements, unless waived by the SEP approval authority: (b) The engineering management approach to include ***technical baseline management; requirements traceability; configuration management***; ***risk***, issue, and opportunity management; and technical trades and evaluation criteria. (c) The software development approach to include architecture design considerations; software unique risks; software obsolescence; inclusion of software in technical reviews; ***identification, tracking, and reporting of metrics for software technical performance,*** process, progress, and quality; software system safety and security considerations; and software development resources. (g) ***Specific technical performance measures and metrics, and SE leading indicators to provide insight into the system technical maturation relative to a baseline plan.*** Include the maturation strategy, assumptions, reporting methodology and maturation plans for each metric with ***traceability of each performance metric to system requirements and mission capability characteristics.*** (k) The timing, conduct, and ***entry and exit criteria for technical reviews***. (l) A ***description of technical baselines*** (e.g., concept, functional, allocated***, and product***), baseline content, and the technical baseline management process.
DoDI 5000.88	3.4.b Technical Baseline Management	If practicable, the PM will establish and manage the ***technical baseline*** as a ***digital authoritative source of truth***.

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DoDI 5000.88	3.4.c Configuration and Change Management	(3) Provide for ***traceability of mission capability to*** system requirements to ***performance*** and execution ***metrics.***
DoDI 5000.88	3.4 f. Risk, Issue, and Opportunity Management.	(2) Risk management plans will address risk identification, analysis, mitigation planning, mitigation implementation, and tracking. ***Technical risks and*** issues will be reflected in the program's IMP and Integrated Master Schedule (IMS).
DE Strat	1.3 Use models to support engineering activities and decision making across the life cycle	Exchange of information between technical disciplines or organizations should take place via model exchanges and ***automated transformations***.
DE Strat	2.3 Use the authoritative source of truth across the lifecycle	As the ***technical baseline*** matures…stakeholders will generate ***digital artifacts***. Use the authoritative source of truth to: • ***produce digital artifacts***, support reviews, and inform decisions • make informed and timely decisions to manage ***cost, schedule, performance, and risks***.
SW Strat	3 Unifying Principles	Resilient software must be defined first by execution stability, ***quality***, and dependable cyber-survivability. These attributes can be achieved at speed by aggressively adopting modern software development practices that effectively ***integrate performance*** and security throughout the software development lifecycle. More Than Code - Software modernization is more than just code development. It includes the many ***policies, processes, and standards that take a concept from idea to reality.*** Considerations such as ***contracting*** and intellectual property rights, as well as transition from development to fielding, are often overlooked and underappreciated. These policies, processes, and standards ***must not hinder, but empower the vision of this strategy.***
Eng Guidebook	3.4.2 Software Engineering	Programs should employ a highly iterative approach that quickly demonstrates small progressive updates and *provides* hands-on stakeholder participation so as to reduce rework and help focus the MVP solution.
EVMIG	2.1.3.4	The PMO and the PM help ensure that all solicitations and contracts contain the correct EVMS and/or Integrated Master Schedule (IMS) requirements, tailored as appropriate for the specific nature of the program in accordance with DoD policy.

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GAO or AAF Document	**Section**	**Excerpt** **Note: (parenthesized comments are not in document)**
SE Guidebook	Introduction	The developer's SEMP, which is the contractor-developed plan for the conduct, management, and control of the integrated engineering effort, should be consistent with the Government SEP to ensure that Government and contractor technical plans are aligned.
SEP	1 Introduction	Describe the program's plan to align the Prime Contractor's SEMP with the PMO SEP.
SEP	2.1 Requirements Development	Program should maximize traceability and the use of models as an integral part of the mission, concept, and technical baseline to trace measures of effectiveness, measures of performance, and all requirements throughout the life cycle from … requirements authoritative sources into a verification matrix, equivalent artifact, or tool that provides contiguous requirements traceability digitally. Program should trace all requirements from the highest level … to the lowest level (e.g., component specification or user story). This traceability should be captured and maintained in digital requirements management tools or within model(s). The system Requirements Traceability Matrix should be a model output that can be embedded in or attached to the SEP, or the SEP should contain a tool reference location. … The matrix should include the verification method for each of the identified requirements.
SEP	3.1 Technical Schedule	Provide the current technical schedule derived from the IMP/IMS for the program, including activities/tasks and event milestones such as … MVP/MVCR.
SEP	3.2.2 TPMs	The program should add, update, or delete TPMs documented in the SEP. This section should include: A set of TPMs covering a broad range of core categories, rationale for tracking, intermediate goals, and the plan to achieve them with as-of dates SE leading indicators to provide insight into the system technical maturation relative to a baseline plan The maturation strategy, assumptions, reporting methodology, and maturation plans for each metric with each performance metric traced to system requirements and mission capability characteristics Whether any contractual provisions relate to meeting TPM goals or objectives

Appendix 1 Elements of GAO Guides, PMBOK, and Adaptive Acquisition Framework (AAF) Policies to Be Included in Something of Value		
GAO or AAF Document	**Section**	**Excerpt** **Note: (parenthesized comments are not in document)**
		Description of how models, simulations, the digital ecosystem, and digital artifacts will be used to support TPM tracking and reporting. Description of the traceability among Key Performance Parameters; KSAs; key technical risks and identified TPMs. Identify SW measures for SW technical performance, process, progress, and quality.
PMBOK	2.7.1.2 Effective Metrics	Measure what is relevant and ensure that the metrics are useful. **Specific** as to what to measure. **Meaningful:** should be tied to the business case, baselines, or requirements. It is not efficient to measure product attributes or product performance that do not lead to meeting objectives. **Relevant:** The information provided by the measure should provide value and allow for actionable information.
PMBOK	2.7.2.1 Deliverable Metrics	By necessity, the product, services, or results being delivered determine the useful measures. Customary measures include: **Measures of performance (MOP): MOPs** characterize physical or functional attributes relating to the system operation. Examples include size, weight, capacity, accuracy, reliability, efficiency, and similar performance metrics. **Technical performance measures (TPM):** Quantifiable measures of technical performance are used to ensure system components meet technical requirements. They provide insights into progress in achieving the technical solution.

Appendix 2 Elements of *PMI EVM Standard* and *PMBOK Guide*® that should be Included in Revised DoDI 5000.88 and other components of Something of Value			
DoDI 5000.88 Reference	**PMI EVM Std. Section**	**PMBOK® Guide Section**	**Revised DoDI 5000.88**
3.4.d.(1) IMP 3.4.b **Product baseline**	3.2 Developing the Project Management Plan		Develop the IMP to include the scope management plan (including ***product scope***), requirements management plan, schedule management plan, cost management plan, quality management plan, …, risk management plan, and procurement management plan.
3.4.c. Configuration and Change Management 3.4.c.(1) ***functional, physical, and performance characteristics of the system design.*** 3.4.c.(2) … track any changes (e.g., a dynamic change log for in and out of scope changes, formal engineering change proposals) and provide an audit trail of program design decisions and design modifications.	**3.2 Components:** **Change Management Plan** **Configuration Management Plan** **4.6.1 Change** Requests may result from an error in defining the **product scope**… **evolving requirements**	6th ed.: 5, 5.3.3.1 Project scope statement	The WBS is used as the single structure that integrates the product scope, schedule, and cost baselines together at a common level. The WBS decomposes the scope of work to be carried out by the project team, and a WBS dictionary defines the scope (including ***product scope***) of work for each WBS component. The product scope is the ***features and functions*** that characterize a product, service, or result.
3.4.a.(b) ***requirements traceability*** 3.4.a.(g) ***Specific technical performance measures and metrics*** with ***traceability of each performance metric to system requirements and mission capability characteristics.***	3.2.4, 3.2.6	5.2.3.2 Require-ments trace-ability matrix. 4.3.3.2 TPMs	The project team develops a responsibility assignment matrix (RAM) that tracks the scope (including **product scope**) to the responsible organization (OBS) in which all work scope and resources or cost under the EVM approach are mapped to control accounts. For procurement planning, the project team determines whether to use EVM for any procurements…, how the vendors will integrate EVM data into the overall project's EVM data and how performance management periods will be aligned. If EVM is flowed down to vendors/subcontractors, then plans should be adjusted to acknowledge the need to develop how Schedule, Cost, Risk, and other Project Management Knowledge Areas are fed from input provided by the vendors/subcontractors.

3.4.f.(2) ***Technical risks and issues will be reflected in the program's IMP and IMS.***	3.3 Integrating the **Product Scope**, Schedule, and Cost Baselines 3.3.2 Risk Management ..outputs of the **risk management** process as described in the *PMBOK® Guide* should be incorporated into the PMB.		In creating the PMB, five Knowledge Areas (Project Scope Management, Project Schedule Management, Project Cost Management, ***Project Risk Management***, and Project Resource Management) need to be integrated in such a manner that the scope (including product scope), schedule, ***risk***, and cost are associated at a common level across the baselines (either CA, WP, or activity) with an established performance measurement method.
3.4(k) The timing, conduct, and ***entry and exit criteria for technical reviews***. 3.4.a.(b) ***Software technical performance*** 3.4.a.(g) ***Specific technical performance measures and metrics***		**6th ed.: 6.2.2.1**	The project WBS, deliverables, and ***acceptance criteria*** documented in the scope (including product scope) baseline are considered explicitly while sequencing activities.
		4.3.3.2 TPMs	Determine the measurement method, technique or criteria to be used for progress evaluation of the activity types within a WP. Measure progress towards achieving the scope (including **product scope**) and technical performance goals for each CA.
3.4.a.(g) ***Specific technical performance measures and metrics***		**6th ed.:** 1.2.4.7	Collect work performance data… including reported percent of work physically completed**, quality and technical performance measures**, etc.
none	4.6.2.1 Scope (including product scope) Change Analysis Changes to the …**product scope** impact the resources, schedule, and cost of a project.		Whenever work and budget moves into, out of, or within the project, one or more CAs change. Any change should always be reflected on the RAM and authorized through change control.

3.4.a. SEP (3)(k) The timing, conduct, and entry and exit criteria for technical reviews. (3)(l) A description of technical baselines (e.g., concept, functional, allocated, and product), baseline content, and the technical baseline management process.	3.3.3 Scope Baseline …information on the **product** deliverables against which execution is compared	**6th ed.:** 6.2.1.1, 5.3.3.1 7th ed.” 2.4 Alignment	Align the scope baseline, comprised of the project scope statement, WBS, and WBS dictionary, with work and planning packages. The detailed project scope statement, either directly or by reference to other documents, includes the following: ***Product scope*** description. Progressively elaborates the characteristics of the product described in the requirements documentation. Deliverables. Any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project. ***Acceptance criteria***. A set of conditions that is required to be met before deliverables are accepted. Planning activities and artifacts need to remain integrated throughout the project. …planning for the performance in terms of scope and quality requirements aligns with delivery commitments, allocated funds, type and availability of resources, the uncertainty inherent in the project, and stakeholder needs…. combine the planning artifacts into an integrated project management plan (IMP).

Appendix 3 Letter to the Hon. Robert J. Wittman

Paul Solomon
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December 16, 2023

The Honorable Robert J. Wittman
Vice Chairman, HASC
2055 Rayburn House Office Building
Washington, DC, 20515-4601

Subj: "Something of Value" not "Earned Value"

Dear Vice Chairman Wittman:

I recommended that DFARS be revised to exempt *all* contracts of the DoD from EVMS requirements based on the EVMS standard, EIA-748. Now, I recommend that DoD provide *incentives* for contractors to replace compliance with the EIA-748 guidelines with something of value from the GAO.

Something of Value is a book that portrayed the Mau Mau uprising in Kenya. A quote from that book is pertinent: *"When we take away from a man his traditional way of life, his customs, his religion, we had better make certain to replace it with Something of Value."*

In my white paper, I cited the Sec. 809 Panel report that "another substantial shortcoming of EVM is that it does not measure product quality. A program could perform ahead of schedule and under cost according to EVM metrics but deliver a capability that is unusable by the customer…Traditional measurement using EVM provides *less value* to a program than an Agile process in which the end user continuously verifies that the *product meets the requirement."*

In 1999, Gary Christle, one of the founding fathers of EVM, stated his vision in terms of the following:

- The quality of a management system is determined not by the absence of defects, but by the presence of *management value*.
- Integrate cost, schedule, technical performance, and risk management

GAO provides guidance to obtain management value in the best practices of the following guides:

- GAO-24-105506: *GAO Agile Assessment Guide: Best Practices for Adoption and Implementation*
- GAO-20-195G: *GAO Cost Estimating and Assessment Guide*
- GAO-16-89G: *GAO Schedule Assessment Guide*

Please prod DoD to fix its acquisition policies and guides by adding incentives for contractors to implement those best practices. Then, provide oversight of the extent to which DoD and the contractors achieve integrated program management by implementing those practices.

Appendix 4 Project Management Best Practices from Capability Maturity Model® Integration (CMMI®) Model V3.0 but Absent from EIA-748.

Best Project Management Leading Practices from ISACA CMMI Model V3.0 (per GAO Report GAO-24-106886) but Absent from EIA-748	
Practice Number	**Practice Statement**
Requirements Development and Management (RDM) RDM 2.4	Develop, record, and keep updated bidirectional traceability among requirements and activities or work products.
RDM 2.5	Ensure that plans and activities or work products remain consistent with requirements.
RDM 3.4	Identify, develop, and keep updated interface or connection requirements.
RDM 3.7	Validate requirements to ensure the resulting solution will perform as intended in the target environment.
Product Integration (PI) PI 3.1	Review and keep updated interface or connection descriptions for coverage, completeness, and consistency throughout the solution's life.
Risk and Opportunity Management (RSK) RSK 3.5	Manage risks or opportunities by implementing planned risk or opportunity management activities.
Supplier Agreement Management (SAM) SAM 4.1	Select measures and apply analytical techniques to quantitatively manage suppliers against their performance targets.
Verification and Validation (VV) 1.1	Perform verification to ensure the requirements are implemented and record communication results.
VV 1.2	Perform validation to ensure the solution will function as intended in its target environment and record communication result.
VV 3.1	Develop, keep updated, and use criteria for verification and validation.
VV 3.2	Analyze and communicate verification and validation result.

Appendix 5 Letter to the Hon. Joni Ernst

Paul Solomon
3307 Meadow Oak Drive
Westlake Village, CA 91361

July 7, 2021

The Honorable Joni Ernst
Senate Armed Services Committee
111 Russell Senate Office Building
Washington, DC 20510

Subject: Proposed NDAA Markups to Fix the PMIAA; Delete "shall not apply to DoD"

Dear Sen. Ernst:

The Senate will soon begin markup of the NDAA for FY 2022. This is a second request to fix the PMIAA by making it applicable to DoD. You can do this by deleting the PMIAA provision:

> 2) Application to DoD.--Paragraph (1)
> shall ***not*** apply to the Department of Defense to the extent that the provisions of that paragraph are substantially similar to or duplicative of--
> (A) the provisions of chapter 87 of title 10; or
> (B) policy, guidance, or instruction of the Dept. related to program management.''.

My previous request to you (and Sen. McCaskill) was in the attached letter, Subj: *DoD Acquisition Reform; From Earned Value Management System (EVMS) to a Project Management Standard*, dated June 4, 2018. The "Request to You" below is still pertinent. Please just substitute the current OUSD leadership for OUSD Lord, substitute Sen. Warren for Sen. McCaskill (to show bipartisan support) and cite the NDAA for FY 2022. My previous letter to Sen. Warren, subj: Subject: *Lowering Defense Costs and Initiating Acquisition Reforms*, dated May 18, 2021, is also attached.

An excerpt from the June 2018 letter to you follows.

> **Request to You**
>
> It is requested that you consider taking some of the following actions:
>
> 1. Discuss my recommendations with OUSD Lord and myself.
>
> 2. Request GAO to review DoD policy, guidance, and instructions and to determine if PMIAA is applicable to DoD. (I expect that GAO will verify and corroborate my allegations).
>
> 3. Determine if a markup to NDAA is needed to transform PMIAA into a law that requires *all* federal agencies to "adopt widely accepted (or ANSI-approved) management standards that are often used in the private sector, …ensure that taxpayer dollars are safeguarded by increasing accountability throughout the federal government."

You have read the justification for the recommendations in my previous letters to you, HASC Chairman Smith, Sen. Warren, Sen. Sanders, and in the white paper.

False Claim

As you also know, I have also requested that Rep. Speier reintroduce HR 6395, Sec. 1745, *Requirements Relating to Program and Project Management* (P/PM). I believe that real acquisition reform requires oversight and legislation by you, Rep. Speier, and possible co-sponsors.

There is a false claim in the DoD EVM System Interpretation Guide (EVMSIG). EVMSIG alleges that, when EVMS is implemented in a disciplined manner consistent with the 32 Guidelines contained in EIA-748,

> "Government and industry program managers use EVM as 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."

Independent reports (by DoD and the Section 809 Advisory Panel) that are cited in my white paper refute DoD's allegation. The white paper includes a new path with specific actions for acquisition reform. That path is based on an ANSI-accredited P/PM standard, not the sham standard, EIA-748.

Vision

Your actions will open a path towards realizing Gary Christle's 1999 vision and closing the issues in the 2009 DoD EVM Report. Gary's vision follows:

- The quality of a management system is determined not by the absence of defects, but by the presence of management value.
- Integrate cost, schedule, technical performance, and risk management.

Paul J. Solomon
818-212-8462
Paul.solomon@pb-ev.com

Hon. Adam Smith, HASC
Hon. Sen. Bernie Sanders
Hon. Sen. Elizabeth Warren, SASC
Hon. Jackie Speier, HASC
Hon. Kathleen Hicks, Dep. Sec. of Defense
Hon. Stacy A. Cummings, Acting Under Sec. Def. for Acquisition and Sustainment
Anthony Capaccio, Bloomberg News
Michael LaForgia, NYT

Appendix 6 Guide to EVMS Guidance

Guide to Guides for Implementing Earned Value Management (EVM) in Compliance with NDIA EVM Standard EIA-748		
Author/Title	**# of Pages**	**Excerpts**
NDIA Integrated Program Management Div.		
EVMS Acceptance Guide	28	How much of the work in the budget plan (planned value) has been accomplished or "earned" (EV)?
EVMS Intent Guide to the EIA Standard for EVMS (EIA-748)	56	The purpose for identifying objective indicators is to provide a means to measure the quantity of work accomplished – the EV. There is a direct relationship between the budget at completion and EV. The time-phased budget assigned to the work scope is the basis for computing the EV for work accomplished. Performance measures are one aspect of an integrated program management system as other processes control the quality and technical content of the work performed. A project baseline that reflects the common agreement between the two parties, for example a customer and contractor, provides a common reference point for progress assessment. It provides recognition of contractual requirements and precludes unauthorized changes to the performance measurement baseline. The project target cost must be reconciled with the performance measurement baseline and management reserve. Intent: Reconcile the project value (target cost plus authorized, unpriced work) with the sum of all control account budgets, indirect budgets, management reserves, and undistributed budgets.
Guide to Managing Programs Using Predictive Measures	129	This identifying threshold looks for tasks in a schedule (formal or informal) that have already begun but that have a Percent (%) Complete value that is 0% or has any inconsistencies when compared to the approved schedule.
Industry Practice Guide for Agile on EVM Programs	80	Removal of the Story from QBD may result in an increase in Feature WP % since the percentage of unfinished effort has decreased. Reflect changes in IMS Forecast dates and EV Cost Tool EAC.
Guide to the Integrated Baseline Review (IBR)	37	Quantifiable Backup Data (QBD). This is used to validate the Supplier has established and is using objective methods for assessing progress in accordance with their established EVMS EV techniques. The EVT is established based on how the work is planned (BCWS) and BCWP is earned consistent with the EVT. Only a sampling should be provided for demonstration.
Planning & Scheduling Excellence Guide	256	% vs. Time Analysis compares the calculated time or duration-based % complete with scope-based % complete value (may be either Physical or EV % Complete). The training for Senior Executive Leadership would include the following skills: Overview of schedule analysis and metrics (with a focus on how to use these metrics to make programmatic decisions and influence behavior) including:

Guide to Guides for Implementing Earned Value Management (EVM) in Compliance with NDIA EVM Standard EIA-748		
Author/Title	**# of Pages**	**Excerpts**
		CPLI, BEI, SPI, Duration-Based vs. Scope-Based % Complete, Schedule Rate Chart, CEI, Critical Path Method and Analysis, Schedule Risk and Opportunities Assessment, and standard Schedule Health Assessment Metrics.
Surveillance Guide	29	This document provides surveillance guidance and characteristics of successful EVMS Surveillance Programs. It is intended to assist suppliers in developing a robust surveillance plan that could be executed both internally and for oversight of subcontractors. This guidance may also provide customers and organizations with EVMS oversight responsibility a framework that can likewise be used to conduct surveillance of suppliers. Suppliers planning their Surveillance Programs should refer to the latest customer surveillance guidance for information on how the customer plans and conducts EVMS Surveillance Reviews to enable better coordination of their internal, subcontractor, and joint surveillance planning and execution. A standard approach to effective surveillance benefits all parties. It ensures a common understanding of expectations, encourages efficiencies through the use of a uniform process, and gives consistent guidance to organizations responsible for EVMS surveillance. This NDIA IPMD Surveillance Guide is recommended for use by all stakeholders involved in EVMS surveillance.
Contracting with EVM Requirements	70	The use of a compliant EVMS can assist a business with establishment of sound business practices, as well as assure the government that there is not fraud, waste, and abuse of contract funds. To Complete Performance Index (TCPI) indicates the future required cost efficiency (i.e., effort) to achieve a target. This can be based on BAC or EAC. The differences between the CPI and the TCPIBAC or TCPIEAC indicate the achievability or realism of the projected EAC and may be used by management to evaluate the EAC realism. Any significant difference between the CPI and the TCPI, should be accounted for by management in their forecast of the final cost.
EVMS Application Guide	42	When incentives are used in this way, it is possible – indeed likely – that a project could overrun a flexibly-priced contract, incurring a reduction in profit, while at the same time earning a maximum award fee for having submitted timely, reliable, and actionable program management information. Variances are an important element of the EVM process and need to be recognized as early warnings of deviations from the PMB. A desirable outcome may be compromised if the contract includes incentives for reporting a monthly Schedule Performance Index (SPI) and Cost Performance Index (CPI) near 1.0 (no variance).
Total NDIA pages	**727**	
DoD		

Guide to Guides for Implementing Earned Value Management (EVM) in Compliance with NDIA EVM Standard EIA-748		
Author/Title	**# of Pages**	**Excerpts**
DoD EVM Implementation Guide	88	EARNED VALUE TECHNIQUE (EVT): A specific technique (e.g., Milestone Method, % Complete, 50/50, 0/100, Units Complete, Apportioned Effort, LOE, etc.) selected to represent the measurement of work scope progress and accomplishment in a work package.
DoD EVMS Interpretation Guide	103	The Guidelines have been published as the Electronic Industries Alliance (EIA) standard EIA-748, EVMS. The DoD only recognizes the Guideline statements within the EIA-748 and periodically reviews the Guidelines to ensure they continue to meet the government's needs.
Total DoD pages	**191**	
Humphreys and Associates		
Book: Project Management Using EV	416	In addition to becoming an industry-wide standard, U.S. Government agencies use the EIA-748 Standard for EVMS Guideline requirements as the basis to perform contractor EVMS compliance reviews and recurring surveillance reviews when an EVMS is contractually required.
Article: Using EV Assessment and the % Complete Technique	2	To make the % complete EV technique more reliable, the concept of Quantifiable Backup Data (QBD), or metrics, was instituted. The QBD requires that the CAM define detailed objective completion criteria and the budget associated with each detail before work commences. The monthly EV is then based on the completion of each detail rather than based against the total work package budget. The QBD are maintained by the CAM but are still under change control after the baseline has been established. There still may be some subjectivity with this technique; thus, many projects still practice the "90% rule" (or 75% or 80%, etc.) for work packages using this technique.

Appendix 7 Letter to the Hon. Roger Wicker

Paul.solomon@pb-ev.com January 31, 2025

Hon. Sen. Roger Wicker
Chairman, SASC
Russell Senate Building, Room 228
Washington, D.C., 20510

Subject: Recommendations to *Restore Freedom's Forge*

Dear Hon. Sen. Wicker:

I just finished watching your hearing "To receive testimony on defense innovation and acquisition reform." I also re-read your report, *Restoring Freedom's Forge* (*Forge*). I sent *Forge* recommendations to you on January 7 that also address issues and topics raised at the hearing.

My solutions are included in the two white papers cited in the attached letter to Mr. Feinberg, Subj: Acquisition Reform Strategic Objectives and Tactics, dated January 26, and in the white paper, *Integrating the Embedded Software Path, Model-Based Systems Engineering, MOSA, and Digital Engineering with Program Management*, January 27, 2025.

Restoring Freedom's Forge

My solutions address two parts of your plan *FOR DRIVING EFFICIENCY INTO WEAPON SYSTEMS ACQUISITION,* Cut Red Tape and Enable Decisive Action. Pertinent excerpts from your report follow.

Cut Red Tape Excerpts

Decades of layered statute and regulation has created a labyrinth of rules…prevent…thinking innovatively or moving with urgency. Congress should repeal statutory provisions that add reporting requirements…or micromanage the executive process.

… regulatory obstacles and busy work…striking or streamlining hundreds of redundant or distracting provisions from statute, keeping only the core tenants of good policy.

The FAR…including supplements, clauses, forms, and instructions – runs 6,000 pages, with thousands more in guidebooks…Overregulation has created a culture of compliance and box-checking that comes at the expense of mission outcomes.

Enable Decisive Action Excerpt

Dozens of oversight organizations drive lengthy reviews to ensure compliance with mountains of policies. The more decisions are bogged down by unaccountable officials, the more bloated and dysfunctional the organization becomes.

Hearing

The solutions also address the following issues raised at the hearing:

- Regulations…outdated and excessive compliance requirements….the type of work that DOGE is contemplating…Contracting regulations total more than 6,000 pages. Financial regulations add up to more than 7,000 pages…how this committee can reduce the statutory and regulatory burdens, even as we retain the core elements of good policy.

- …perverse incentives embedded in our broken acquisitions process.
- …centralized, predictive program…management, and oversight process values time spent, not time saved. It values costs and effort, not value and outcomes.
- changing the reviewer to doer ratio.
- Digital thread and accountability…digitize our industrial base, we must digitize our bureaucracy.
- DoD's management of technical debt.

Strategic Objectives and Tactics proposed to Mr. Feinberg

I also asked Mr. Feinberg to adopt the following strategic objectives and tactics to fix the acquisition process. If you agree that these are correct and consistent with your objectives, let him know.

Strategic objectives to transform the acquisition of weapon systems.

1. Hold contractors and DoD program managers accountable for outcomes.
2. Tear down NDIA's barrier to entry facing non-traditional defense contractors.
3. Eliminate regulations that increase costs and enable false reporting.
4. Institutionalize digital engineering.

Implementation Tactics

1. Revoke DFARS Earned Value Management (EVM) regulation. Compliance requirements and reviews divert a program manager's focus from the product to the process. Reward real engineering, not financial engineering.
2. Reduce personnel at contractors and DoD that perform non-value-added tasks.
3. Replace periodic, misleading, manipulated EVM reports of schedule and cost performance with real-time, automated status reports that are based on Authoritative Sources of Truth. Replace botched metrics with outcome-based metrics.
4. Provide goals to USD nominees, Mr. Duffey and Mr. Michael.
5. Establish common objectives with Sec. Def. Hegseth and Mr. Vought.

Sen. McCain

I supported Sen. McCain during 2011-2018 with assessments and recommendations regarding weapon systems acquisition reform and oversight of the F-35 program. I know how to cut out waste, fraud, and abuse in acquiring weapon systems and how to achieve your objectives.

This letter, the white papers, and letters to and from Sen. McCain may be downloaded from www.pb-ev.com at the Acquisition Reform and "White Paper" tabs.

Yours truly,

Paul J. Solomon

CC:

Sen. Joni Ernst
Sen. Elizabeth Warren
Sen. Jack Reed
Hon. Glen Grothman, HOAC
Hon. Adam Smith, HASC
Hon. Ken Calvert, HAC
Hon. Mike Rogers, HASC
Hon. Robert J. Wittman, HASC
Hon. Donald Norcross, HASC
Hon. Ro Khana, HASC
Hon. David L. Norquist, NDIA
DOGE

ENGINEERING & TECHNICAL MANAGEMENT (ETM) Certification Standards Courses

ETM 1030 Requirements Definition and Analysis Fundamentals: Roles of acquisition workforce members serving in engineering, scientific and technical positions during the requirements definition, requirements analysis, and architecture design processes.

ETM 1040 Technical Management Fundamentals: introduces students to the eight Technical Management process of the systems engineering (SE) "vee" model. This course provides the essential foundations needed for systems engineers and others to effectively participate in the management of DoD SE processes and their related activities.

ETM 1070 Digital Literacy Fundamentals: introduces digital literacy concept and strategies. understand digital behaviors and practices to support implementations of digital concepts. understand the importance of identifying, communicating, and preserving information when operating within a digital environment. learn digital approaches that use authoritative sources of systems' data and models as a continuum across disciplines to support lifecycle activities from concept through disposal.

ETM 2070V Digital Literacy for Practitioners: apply digital engineering (DE) behaviors and practices to support implementations of digital concepts. identifying, communicating, and preserving information when operating within a digital environment. integrate digital approaches that use authoritative sources of systems' data and models as a continuum across disciplines to support lifecycle activities from concept through disposal.

CENG 001 DE for DoD Consumers Credential: of key DE information and perspectives. It establishes how Models, Simulations, and DE can be a benefit over the entire system life cycle and how Models, Simulations and DE can support SE. It is expected to provide an understanding of the role of Model Based Systems Engineering, the needs for digital artifacts related standards, **how to define a finite set of digital artifacts, and the ability to develop constructs for assembling digital artifacts.**

Addresses DE across the DoD Acquisition Lifecycle and DoD's DE fundamentals, strategic goals, and policies. DoD's shift towards an acquisition environment that relies on models, simulations, and DE that identify with the DoD DE Strategy, DoD DE Fundamentals, and DoDI 5000.02.

Software Engineering (SWE) 0044 Value Metrics: …pivotal role of value metrics, offering a compass for true success. Value metrics are an outcome-based assessment of mission improvements and efficiencies realized from the delivered capabilities as defined by the End-User perspective. Value metrics will help DoD understand whether Program outcomes are worthwhile investments! Agile attempts to fix cost (via dedicated resources) and schedule (via fixed release cycles) to 1) allow requirements to adapt to maximize value and 2) so program teams can focus on value delivery and improving delivery efficiency.

SWE 2031 What Agile Means for the Defense Acquisition Workforce: It answers what Agile is and why Agile results in better, faster, cheaper and easier capability development for our warfighters. Agile is all about small batch processing and automating as much as possible to remove human error from the process. However, DoD Programs have unique requirements where Agile needs to be tailored in to make it work.

Appendix 9 Letter to Hon. USD (R&E) Emil Michael

The Honorable USD (R&E) Emil Michael

Subj: Shortcomings of Draft SAE/EIA-748E Earned Value Management System Standard, Part 2

Dear Hon. USD (R&E) Michael:

My letter to USD Duffey, Subj: Shortcomings of Draft SAE/EIA-748E Earned Value Management System Standard (EVMS) dated August 15, 2025, stated: "the draft SAE/EIA-748E is devoid of engineering best practices to achieve the product scope or technical baseline."

Evidence follows.

a. The sole association with engineering practices is the term, "technical performance goals," in SAE/EIA-748E Guideline 5, "Identify in the schedule the physical products, milestones, technical performance goals, *or* other objective indicators that will be used to measure progress."
b. Identification of technical performance goals is optional because of the "or" term.

As stated in my letter to NDIA Pres. Norquist, Subj: Assign System Engineering (SE) Experts to Salvage Draft EIA-748E EVMS Standard dated August 12, EIA-748E is not within the scope of SAE International's policies or of the SAE Systems Management Council Organization and Operating Procedures (SMC).

Excerpts from the SAE documents follow:

> Purposes: to advance the knowledge…standards, and engineering practices.
>
> Ends Policy: consensus-based standards to advance quality, safety and innovation.
>
> Contain specific performance requirements and are used for: (1) design standards, (2) parts standards, (3) minimum performance standards, (4) quality, and (5) other areas conforming to broadly accepted engineering practices or specifications for a material, product, process, procedure, or test method.

In my opinion, the guidance to optionally "identify in the schedule…technical performance goals" is not sufficient to meet the SAE and SMC criteria for a standard that it:

a. Advances the knowledge of engineering practices.
b. Contains specific performance requirements and are used for minimum performance standards, quality, and other areas conforming to broadly accepted engineering practices or specifications for a material, product, process, procedure, or test method.

Also, its statement, "Earned value is a direct measurement of the quantity of work accomplished. The quality and technical content of work performed is controlled by other processes," disassociates EIA-748 from quality.

If you agree with me, please inform NDIA Pres. Norquist that:

a. SAE/EIA-748E is unacceptable to DOD's needs.
b. You concur with any or all of the assessments or recommendations in the three letters to him that were cited in the letter to USD Duffey.
c. SAE/EIA-748E is devoid of engineering best practices to achieve the product scope or technical baseline.
d. SAE/EIA-748E is not a voluntary consensus standard (VCS) as defined by OMB Circular A-119, Federal Participation in the Development and Use of VCSs and in Conformity Assessment Activities (Circular). Circular states that "all federal agencies must use VCSs in lieu of government-unique standards in their procurement and regulatory activities, except where … otherwise impractical." "Impractical" includes circumstances in which such use would fail to serve the agency's…program needs; be inadequate, or be less useful than the use of another standard. SAE/EIA-748E is impractical based on the following evaluation factors in Circular:

    1. The prevalence of the use of the standard SAE/EIA 748D in the national and international marketplaces.
    2. The problems addressed by the standard and changes in the state of knowledge and technology since the standard was prepared or last revised. EIA-748 does not address the state of knowledge and technology since it was last revised. It is silent on the product or technical baseline, risk management, engineering best practices, digital engineering, and on tracing the requirements baseline to the schedule and work packages.

Paul Solomon