**DOD Acquisition Reform: *EVMS-lite* and Integrated Program Management, rev. 19**

—Paul Solomon 10/25/2025

Note: This revision provides evidence that EIA-748 is "not fit for use" to monitor contractor performance in achieving the cost, schedule, and performance goals, per the criteria of SAE International policy and the OMB Capital Programming Guide.

More than 20 years ago, the founding fathers of the Earned Value Management System (EVMS) stated their visions for the then-pending EVMS Standard to replace the DOD document, "Cost/Schedule Control Systems Criteria," which had been used since 1967 for capital acquisitions. Their visions, stated below, have not been realized.

A path to effective, Integrated Program Management (IPM) should include changes to regulations and policy to require that EVM be linked with systems engineering (SE), the product scope (features and functions), technical performance measurement (TPM), and risk management. The path should support current policy of the Office of Management and Budget (OMB) and Office of Personnel Management (OPM). The path should include elimination of the OMB policy and FAR/DFARS requirement for compliance with the EVMS Standard, EIA-748. Instead, ***DOD should revise, streamline, and transform the "DOD Earned Value Management System Implementation Guide" (EVMSIG) and impose it on contractors as a "Government-unique, internal standard."***

The path includes the following DOD and OMB actions:

1. DOD tailors and streamlines the *EVMSIG* to incorporate recommendations provided below, called "EVMS-lite." Tailoring reduces the number of guidelines to be covered by compliance reviews from 32 to 20 and modifies five guidelines to emphasize technical performance and to augment "work scope" by adding the product scope including acceptance criteria, rework, technical debt, and risk responses. This will result in significant cost savings.
2. DOD requests to OMB, through the National Institute of Standards and Technology (NIST), that EIA-748 be replaced with a DOD internal standard that is based on the tailored, streamlined *EVMSIG*
3. OMB approves DOD request to replace EIA-748 based on criteria in OMB Circular A-119 (Circular).
4. OMB revises Circular No. A–11 (2020), *Capital Programming Guide.* Currently, *Capital Programming Guide* cites the EVM standard, EIA-748. For example, it states "the other requirements for good project management, including the use of EVM in accordance with the EIA-748 standard are applicable for development efforts or multiple projects in a program." OMB should develop a plan to sunset the use of the EIA-748 standard and replace it with the proposed "Government-unique," internal standard, as discussed below.
5. DCMA discontinues compliance reviews of 12 EVMS Guidelines that are not value-added or cost-justified.
6. DOD issues policy and guidance to provide incentives for program managers and contractors to link EV to TPM, product scope, and risk management, if they comply with the five tailored Guidelines in Table 3, below.
7. DOD issues policy and guidance to provide incentives for contractors to achieve verified cost, schedule, and technical performance objectives and to prohibit payment of award fees when programs are over budget or behind schedule by pre-defined thresholds. The TPMs used for award fee determination shall include some of the specific, measurable, achievable, relevant, and time-bound measures that are included in the SE Plan Outline Version 4 (SEP), Engineering of Defense Systems

Guidebook, Feb. 2022 (Eng Guidebook), Systems Engineering Guidebook, Feb. 2022 (SE Guidebook), DODI 5000.87, and GAO Guides.

8. DOD revises policies, directives, instructions, and guides to incorporate these recommendations.
9. Revise FAR and DFARS clauses regarding EVM to incorporate the Government-unique, internal standard that is proposed below and to make the Systems Engineering Management Plan (SEMP) a contractual requirement.

Federal law, OMB policy, OPM policy, and recent DOD acquisition reform initiatives signal that the federal government and DOD have started down that path. However, the current law, policies and initiatives and plans are insufficient to integrate cost, schedule, technical performance, and risk management.

**Failed Vision**

The vision of the founding fathers was formulated in 1996 and translated into the acquisition reform objectives of Senators McCain, Collins, McCaskill, and Ernst, and HASC Chairmen Ike Skelton and Adam Smith.

The intended purpose of an EVMS was announced when DOD accepted industry guidelines for EVMS to replace similar DOD criteria in 1996. DOD encouraged industry to develop a *widely accepted industry or international standard*. Per the announcement, "It has been our vision of acquisition reform to":

- *Adopt … commercial practices in lieu of practices unique to the government.*
- *Rely on our contractors to maintain management control systems that protect the public interest.*
- *Shift responsibility from government to industry.*
- *Support the "insight, not oversight" philosophy underlying DOD acquisition reform initiatives.*

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.*

In 2009, DOD submitted a report to Congress which assessed the use of EVM. The report was required by the Weapon Systems Acquisition Reform Act of 2009 (WSARA), introduced by Sen. McCain. The report, *DOD EVM: Performance, Oversight & Governance Report* (DOD Report) reiterated Christle's vision and augmented it with objectives regarding the quality of work performed and the integration of systems engineering processes and products with EVM.

In 2014, DOD published the 2014 PARCA Report which stated: "PARCA believes that earned value metrics and technical metrics such as TPMs should be consistent with program progress. Earned Value focuses on the completion of a set of tasks to mature the design. It should be consistent with the set of metrics that indicate the actual **design maturity."**

In April 2021, Stacy Cummings, Acting Asst. Undersecretary of Defense for Acquisition and Sustainment, stated to the Senate Armed Services Committee:

> "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."

Today, the vision of the founding fathers, as clarified by the DOD and PARCA Reports, has still not been achieved. Focus on the **product** was recently augmented by Ms. Cummings. The vision is sharp and well-defined. However, industry and DOD have either obstructed or declined to take actions that will contractually require IPM.

**EIA-748 Not Widely Accepted as a Commercial Practice**

Despite the false claim in the DOD EVMS Interpretation Guide (EVMSIG), EIA-748 is not a widely accepted industry best practice that is used across the commercial sector. A worldwide survey of EVM users by the PMI, in 2010, disclosed that the private sector has largely ignored EIA-748. When the use of EVM is voluntary and not a contractual mandate, only 17 percent of the respondents used EVM based on EIA-748.

The most recent survey is the *Grant Thornton 2016 Government Contractors Survey.* Seventy percent of respondents stated they would not use EVMS if not required to do so. Twenty-eight percent reported having contracts that require use of EVMS. Of those using EVMS, only 37 percent believe it to be a cost-effective management tool and only 25 percent would adopt EVMS voluntarily.

The SASC Senate Report 118-188, NDAA for FY 2025 [to accompany S. 4638], Updates to EVMS requirements (sec. 823), July 8, 2024, confirms that EVM has limited value to "smaller projects." The Report also "recognizes the burden it (EVM) places on small businesses and non-traditional defense contractors that must make significant internal investments to create a compliant EVM system." Thus, the SASC contradicts the EVMSIG's assertion that that "EVM is a *widely accepted* industry best practice for program management that is used across…the commercial sector."

So, retention of EIA-748 does not support overarching policy in DODD 5000.01, *The Defense Acquisition System* (DAS), that program managers adopt best *commercial* practices that reduce cycle time and cost.

The NDAA for FY 2024, Section 827, established a beachhead towards following adopting commercial practices by requiring removal of the DFARS EVMS requirement for software contracts.

**Absence of IPM**

The failures of EIA-748 to link technical performance (Quality Gap), risk management, and product requirements (product scope or technical baseline) with EVM were first targeted in Software Engineering Institute (SEI) Technical Note CMU/SEI-2002-TN-016, "Using CMMI to Improve Earned Value Management," October 2002. These issues were repeated in the November 2010 article in *Defense AT&L Magazine*, "Earned Value Management Acquisition Reform." A white paper that I submitted as a consultant to PARCA and HQ NAVAIR in 2012 includes recommended revisions to DOD instructions and guides and to DFARS. The white paper included the following Executive Summary.

> **"Executive Summary:**
>
> *This project was undertaken to improve the use of EVM within DOD. EVM can be a better program management tool if contractors revised their processes and reports to consistently integrate technical performance with cost and schedule performance and to utilize Systems Engineering (SE) best practices. However, there are no contractual requirements within the acquisition regulations or Data Item Descriptions (DID) to require the following enablers of IPM:*
>
> 1. *Tie the technical baseline to the EV Performance Measurement Baseline (PMB) and*
> 2. *Tie technical progress to the Technical Performance Measures (TPM) of the program.*

*This project was undertaken to address EVM challenges that were addressed in the DOD Report."*

Some of the recommendations to PARCA regarding TPM have been incorporated into DOD "guidance" (DODI 5000.02, Eng Guide, SE Guide, and EVMSIG). However, contractors normally choose not to link EVM to TPM when they don't have to.

**Evidence that the Quality Gap still exists was provided by the DCMA and by a DOD advisory panel.**

In April 2016, DCMA reported a common, EVM finding of a lack of objective measures to assess performance, including **"**Measurement does not indicate technical accomplishment." Despite that report, both the DCMA EVMS compliance procedures and the DCMA EVMS Compliance Metrics (DECM) are silent on technical performance.

The NDAA for FY 2016, Section 809, directed establishment of an advisory panel (Panel) with a view toward streamlining and improving the efficiency and effectiveness of the defense acquisition process and to make recommendations for the amendment or repeal of regulations. In 2018, the Panel reported 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*." (*Section 809 Report of the Advisory Panel on Streamlining and Codifying Acquisition Regulations*, Vol. 1, January 2018 (Section 809 Report).

**NDIA Enables the EIA-748 Quality Gap and Misuse of Management Reserve (MR)**

The NDIA permits the quality gap (between EVM, the product scope, and technical performance) in its guidance documents, the *NDIA EVMS EIA-748-D Intent Guide* (*Intent Guide*) and the NDIA guides:

- *A Guide to Managing Programs Using Predictive Measures* (*Predictive Measures*)
- *An Industry Practice Guide for Integrating Agile and Earned Value Management on Programs, December 9, 2022 Version 1.4 (NDIA Agile Guide)*

Furthermore, *Predictive Measures* and *Agile Guide* provide misleading guidance that, if the program is behind schedule in meeting technical performance goals, it can utilize "***more budgets*** …to take corrective action" including additional budget for a feature that was closed but now requires rework.

***Intent Guide***

Compliance with EIA-748 guidelines does not provide assurance that the technical specifications (product scope) are part of IPM and the WBS. Excerpts from *Intent Guide*:

- Performance measures are one aspect of an IPM as **other processes control the quality and technical content of the work performed.**
- The WBS Dictionary online form may be used to describe the scope of work for all WBS elements. This description ***should*** include, but is not limited to, specific details such as…***technical specifications***.

***Predictive Measures***

Compliance with EIA-748 guidelines does ***not ensure*** that reported cost and schedule variances reflect the true behind schedule condition or that ***MR will not be used*** to provide more budget to offset cost overruns and corrective actions.

Excerpts from *Predictive Measures*:

1. For any Key Performance Parameter that is not within the allowed limits at a ***specific time*** in the program, more work and ***more budgets**** will be needed to take corrective action. As a result, the EVM metrics must be assessed to confirm that they reflect this *out-of-compliance* condition for the TPM.

   *My comment: Disagree. Meeting the technical objectives is behind schedule. That does not justify adding budget from MR.

2. An example of using the TPM to make ***EVM adjustments*** is shown in Figure 36.

   My comment: Agree. Negative EVM adjustments are appropriate.

3. The TPM's technical compliance is then used to calculate a **"*TPM Informed*" BCWP**…This BCWP is ***not the one reported in the IPMR or the IPMDAR,*** but it is used to inform the program decision makers of the confidence in the IPMR or IPMDAR values.

   My comment: Disagree. The "TPM Informed" BCWP should be formally reported to link EVM with technical performance and provide true variances.

***NDIA Agile Guide***

The NDIA Agile Guide contains erroneous and misleading guidance regarding rework.

The Introduction states:

"None of the best practices discussed in this Guide negate any of the fundamental practices described in EIA 748 (or) EVMSIG." This claim is inconsistent with those documents when applied to rework or additional effort "discovered on a feature after that feature is closed and signed off by the product owner." Agile Guide states "If the previously completed and closed Feature Work Package truly requires rework, one solution could be to consider opening a new work package in a new release, based on the placement of the rework in the Product Backlog and determine the source of the budget to complete the scope." However, EIA-748 and EVMSIG are silent on rework except for discussion of the material accounting system.

There is no other potential source of budget to complete the deferred scope other than the original control account. In my opinion, MR cannot be that source unless the risk of rework was identified, documented in the risk register, quantified, and included in the establishment of MR budget. If the budget for the newly identified rework is transferred to another work package, then the schedule variance should be retained by making a negative adjustment to cumulative earned value and transferring the budget to complete the scope to the current or subsequent month of the receiving work package. Thus, a schedule variance will be reported that reflects true technical accomplishment of the original PMB.

This rework guidance should be applicable to the whole contract SOW, not just work for which Agile methods are employed. From my experience, contractors often use MR to budget additional tests, rework of code or drawings, trade studies etc. that were not in the original PMB or in identified risks within MR.

It is recommended that:

- NDIA revise EIA-748 and its NDIA Agile Guide to properly account for rework and technical debt.
- DoD revise pertinent IPM guidance to account for rework and technical debt.
- DCMA compliance review guidance and practices verify that contractors properly account for rework and technical debt.

**Little Insight and Management Value**

The EVM reports submitted by contractors who are compliant with EIA-748 provide little insight and management value to program managers, as discussed below.

**2009**

Per the DOD Report, the "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." Regarding the reliability of contractor's data, the reported stated, "If good TPMs are not used, programs could report 100 percent of EV even though behind schedule in validating requirements, completing the preliminary design, meeting the weight targets, or delivering software." The DOD Report also stated "the program manager should ensure that the EVM process measures the quality and technical maturity of technical work products instead of just the quantity of work performed."

Per the Congressional Record, May 6, 2009, Sen. Susan Collins stated that the GAO observed that contractor EVM reporting lacks consistency and leads to inaccurate data and faulty application of the EVM metric. "In other words, garbage in, garbage out." Collins stated that "With improved EVM data quality, both the government and the contractor will be able to improve program oversight, leading to better acquisition outcomes." She concluded that "I believe this amendment (regarding EVM), Senator McCaskill, and I offer would help to strengthen the Department's acquisition planning, increase and improve program oversight, and help to prevent contracting waste, fraud, and mismanagement." WSARA directed DOD to submit a report to Congress which assessed the use of EVM.

**2010**

HASC Chairman Ike Skelton marked up the NDAA for FY 2011 to require DOD to review acquisition guidance, including DOD Instruction 5000.02, to "consider whether measures of quality and technical performance should be included in any EVM system.

Per the HASC Panel on Defense Acquisition Reform Final Report, March 23, 2010, one of the primary tools the Department does use for performance measurement (***though not currently for true performance management***) is the EVMS. USD AT&L Dr. Ash Carter recently reported to Congress that the Department intends to improve EVMS and expand on its use to allow for it to become a ***true performance management tool.*** EVMS has experienced a number of issues, notably with contractor implementation and ***data quality***.

**2018**

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

**2024**

In my opinion, DCMA EVMS compliance reviews provide false assurance that the contractor IPM Reports convey valid, reliable information. A contractor may be found compliant with Guideline 7 if its progress assessment is based only on the *quantity* of work performed and *not technical performance*.

Contractors are reimbursed for costs incurred to perform the *work* scope regardless of progress towards achieving the acceptance criteria of the *product scope* because cost-reimbursement contract vehicles are "best efforts" contracts. The "best efforts" clause ensures that the government bears the risk that it will receive nothing for the costs expended except contractor's best efforts. Nonetheless, contractors should be required to report progress towards completing the product scope even if being reimbursed for all costs to perform the work.

The lack of focus on product in the procurement process was discussed in Volume 2 of the Section 809 Report. Per Volume 2, "The current system focuses on process, not product. Former ASN(RDA) Sean Stackley said this focus takes PMs' attention away from the fundamentals of cost, schedule, and performance, and is one of the major contributors to negative acquisition outcomes. This perspective is shared by many stakeholders with whom the Section 809 Panel met and was aptly described by one stakeholder as "mission becoming secondary to perfection of the contract."

EVM is costly but has never been validated as cost-effective. *JSCC*, released by DOD on October 3, 2017, was a research effort to identify EVM cost drivers and value and to investigate the cost premium of additional Government requirements associated with EVM. Per Figure 30 of *JSCC*, 27 % of all survey data points identified a High to Medium cost premium to comply with Government EVM Standards. Of those respondents that identified a High to Medium cost premium, 48% were Government Program Management stakeholders.

**Commission on PBBE Reform**

The bipartisan, Legislative Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform published its Final Report on March 6, 2024. In Section X, Required Assessments and Findings, the report's assessment of DoD's use of performance metrics include:

- These metrics provide information only on the pace of spending, not on the *value received.*
- EVM systems *purport* to assess expenditures against established delivery benchmarks but have *long been criticized as easily manipulated and inadequate to the task*.

The Final Report included Recommendation 7: Improve understanding of private sector practices.
The DoD PPBE Implementation Plan (PPBE Plan) for Recommendation 7 includes:

1. Engaging with industry to obtain operationalize understanding of best practices within the private sector.
2. Promote awareness among DoD stakeholders to enhance decision-making capability.

The GAO report, GAO-20-44 *Improving Program Management*, provides compelling information to justify a change to OMB and DoD policy regarding EIA-748. The report cites Project Management Institute (PMI) documents, which include *PMBOK® Guide-Seventh Edition*, as:

4. Widely accepted standards for IPM
5. Utilized worldwide
6. Generally recognized as leading practices for IPM
7. Approved by ANSI

The PBBE Plan states that it must be established that each individual recommendation will improve the Department's processes significantly enough to justify any additional cost to taxpayers for implementation and sustainment. Although there will be implementation costs to adopt private sector best practices, the sustainment cost savings, including elimination of EVM compliance costs, will be substantial. Additional information is provided below in the section, Cost Estimate for *EVMS-lite* (Lower Costs).

**Industry Warnings of Poor Contractor Behavior and EVM Metrics**

Even the defense industry has warned that contractors may provide unreliable EVM metrics. A NDIA Letter to DOD, May 11, 2007, with its attached position paper, "Award Fee Incentive Provisions Using EVM Reporting," admitted that:

"in recent years, some defense contracts have misused these incentives (to achieve program contractual outcomes) by tying achievement of certain EVM cost and schedule metrics to award and incentive fees and thereby ***sacrificing objective program status reporting*** in favor of ***"making the number."***…A greater risk posed by the use of these monthly incentives is that they can provide the wrong focus (i.e., ***management of data and reports***). Managing a program using these data outcomes could cause contractors to …taking other ***actions that might be less than optimal in order to maintain high ratios between budgeted cost and schedule and actuals***…EVM will reveal the truth about a program but meanwhile at-completion projections become constrained and ***project managers will not receive reliable information on contract status throughout most of the Program.***"

A similar warning was issued by Council of Defense and Space Industry Associations (CODSIA) in a letter to DOD, Ref: DOD Report to Congress on Implementation of EVM: Request for Industry Input, July 2, 2009. CODSIA warned that incentivizing contractors based on performance data could promote "poor behavior." The pertinent CODSIA excerpt follows:

"In addition, inappropriate contractual incentives, such as focus on incentivizing or penalizing contractors based on performance data, ***promote poor behavior*** in the establishment of program baselines and EVMS implementations. An example would be the continuing use of incentives based on reported performance metrics, such as the cost performance index (CPI) and/or schedule performance index (SPI).

**NDIA's False Claims about the Quality and Management Value of EIA-748**

The NDIA's claims about the qualities and management value of complying with EIA-748 guidelines are not corroborated by evidence and are refuted by the independent assessments cited previously.

Two NDIA IPM Division guides, provide false claims about compliance with EIA-748 guidelines.

*Contracting with EVM Requirements,* September 13, 2022 (*Contracting*), falsely claims that:

1. "EIA-748 is a **commercial** standard containing the EVM system guidelines, which incorporate best business practices to provide strong benefits for program or enterprise planning and control."
2. "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."

*Contracting*'s assertions that EIA-748 is a commercial standard and that it provides strong benefits was refuted by information in the previous sections.

*EVMS Application Guide* (*SAG*), May 2, 2018, cites additional deceptive, false claims by the NDIA IPM Division about the quality and management value of EVM. The previous revision cites the guide, *Contracting with EVM Requirements.* This revision cites the EVMS *Application Guide* (*SAG*).

*SAG* recommends using incentives to earn "a maximum award fee for having submitted timely, reliable, and actionable program management information." However, compliance with the EIA-748 guidelines provides *false* assurance that the program management information is reliable and actionable. Even if that information were reliable and actionable, not "manipulated," award fee should be based on verifiable progress towards buying a **product** that works, not on implementation of the EVM **process**. EIA-748 focuses on the quantity of work performed, not quality.

*SAG* provides guidance to monitor the performance of risk mitigation plans and states that effective application of EVM provides timely, reliable, and actionable integrated cost, schedule, and technical performance information. However, EIA-748 is silent on "risk management" and the use of technical performance measures is optional. Compliance with the NDIA EIA-748 guidelines is costly but does not provide IPM or management value.

*SAG* was mistitled. It should be retitled, *EVMS Artful Assurance Guide* (*SAAG*).

The preceding assessments discuss waste and abuse during the implementation of EIA-748. Regarding assurance against fraud, my whistleblower lawsuit alleging fraud on the F-35 program was dismissed on jurisdictional grounds by the US Court of Appeals for the Fifth Circuit. Per the Court's opinion, "We are not concerned however, with the overall probability of someone inferring fraudulent activity from the public disclosures. The focus is on whether they *could have* made the inference…we also conclude that the DCMA and GAO reports allege facts that make a potentially fraudulent scheme readily identifiable."

Finally, Undersecretary of Defense (R&E) Heidi Shyu stated "EVMS is not adequate to assess the performance of a program. I have always considered it as a waste of time."

**Law: Project Management Standard**

Legislation to require the use of a project management standard was the Program Management Improvement and Accountability Act of 2016 (PMIAA). It requires OMB to:

1. Adopt and oversee implementation of government-wide standards, policies, and guidelines for IPM for executive agencies;
2. Establish standards and policies for executive agencies *consistent with* **widely accepted standards for program and project management** (IPM) *planning and delivery*;
3. Establish a 5-year strategic plan for program and project management.

Senator Joni Ernst, one of the sponsors of the PMIAA, expressed her legislative intent in a November 2015 press release. "This bipartisan legislation puts our federal government back on track by streamlining efforts and outlining strategies to correct widespread deficiencies, lax oversight and unnecessary cost overruns incurred by preventable delays in meeting stated program goals and deadlines. By adopting ***widely accepted*** management standards that are ***often used in the private sector***, these commonsense reforms ensure that taxpayer dollars are safeguarded by increasing accountability throughout the federal government. I'm

delighted that my colleagues in the Senate recognize the epidemic of mismanagement that's eating away at the effectiveness of our federal government." Clearly, it was *not* her legislative intent to continue the mandate for EIA-748, a standard that is not used in the private sector.

Also, in 2015, per Senate report 114-162, Sen. McCain showed his interest by offering an amendment to require the GAO to "issue a report examining the effectiveness of the legislation on improving Federal IPM in conjunction with the annual GAO High Risk list."

I have taught EVM to commercial IT companies in India and South Korea for use on fixed-price, product development IT contracts. Their EVM processes and best practices were based on PMBOK® Guide, the only project management guide that includes the "product scope" (technical baseline). EIA-748 includes only the "work scope" and is silent on product requirements and risk management. Pertinent IT companies' best practices are described in my article in *The Measurable News*, "Performance-Based EV in Commercial IT Projects," 2010 Issue No. 2.

The best practices of one of these companies, Samsung SDS, include:

1. Defining the requirements baseline for each planned product release
2. Tracing the requirements baseline to the schedule and work packages
3. Tracking status of each requirement
4. Monitoring technical performance with meaningful variance analysis
5. Accounting for deferred functionality
6. Planning and measuring rework
7. Making negative adjustments to EV for accurate status

**Applicability to DOD**

PMIAA gave a potential waiver to DOD by stating it is not applicable to DOD "to the extent that the provisions…are substantially similar to or duplicative of…policy, guidance, or instruction of the Department related to program management.''

However, current DOD policy, guidance, and instruction related to program management and EVM are *not similar* to or consistent with the ANSI-accredited guide for IPM, *PMBOK® Guide.* Part 2 of the *PMBOK® Guide* is accredited by the ANSI and must be updated every four to five years. The assertion of dissimilarity was made in the November-December 2015 *Defense AT&L* article, "A Contract Requirements Rule for Program Managers (PM)."

Quality is one of twelve principles of project management in *PMBOK® Guide*. It is stated as "

3.8 BUILD QUALITY INTO PROCESSES AND DELIVERABLES

> "Project teams measure quality using metrics and acceptance criteria based on requirements. A requirement is a condition or capability that is necessary to be present in a product, service, or result to satisfy a need. Requirements, either explicit or implicit, may come from stakeholders, a contract, organizational policies, standards, or regulatory bodies, or a combination of these. Quality is closely linked to the product acceptance criteria, as described in the statement of work or other design documents. "

The "quality gap" in EIA-748 was targeted previously.

A PM's needs that are covered by the *PMBOK® Guide* but are not mentioned in EIA-748 include the artifacts, measures of performance, metrics, Minimum Viable Product, quality, quality metrics, product (including product breakdown structure, product scope), requirements (including requirements baseline, requirements management plan, and requirements traceability matrix), rework, risk (including management plan, risk responses), and technical performance measures. Table 1 includes detailed descriptions of subjects that meet the needs of IPM but are *absent* from EIA-748.

**Table 1. PMBOK® Guide 7th Edition Subjects Absent from EIA-748**

| Subject | Description |
|---|---|
| Artifacts | Planning activities and artifacts need to remain integrated throughout the project. This means that planning for the performance in terms of (product) scope and quality requirements aligns with delivery commitments. |
| Measures of performance. | Measures of performance characterize physical or functional attributes relating to the system operation. Examples include size, weight, capacity, accuracy, reliability, efficiency, and similar performance measures. |
| Metric | A description of a project or product attribute and how to measure it.<br><br>Metrics associated with the product are specific to the deliverables being developed. As part of planning, the metrics, baselines, and thresholds for performance are established, as well as any test and evaluation processes and procedures that will be used to measure performance to the specification of the project deliverable. The metrics, baselines, and tests are used as the basis to evaluate variance of actual performance.<br><br>A performance review of project results against the project baselines *and other measurement metrics* demonstrates that the project is progressing as planned.<br><br>Misusing the metrics: Regardless of the metrics used to measure performance, there is the opportunity for people to distort the measurements or focus on the wrong thing. Examples include focusing on less important metrics rather than the metrics that matter most. |
| Minimum Viable Product | A concept used to define the scope of the first release of a solution to customers by identifying the fewest number of features or requirements that would deliver value. |
| Quality | Quality focuses on the performance levels that are required to be met. Quality requirements may be reflected in the completion criteria, definition of done, statement of work, or requirements documentation. |
| Quality Metrics | A description of a project or product attribute and how to measure it. |
| Product Breakdown Structure | A hierarchical structure reflecting a product's components and deliverables. |
| Product | An artifact that is produced, is quantifiable, and can be either an end item in itself or a component item. |
| Product scope | The features and functions that characterize a product. |

| | |
|---|---|
| Requirements | Requirements become the foundation of the WBS. Cost, schedule, quality planning, and procurement are all based on these requirements. |
| Requirements Baseline | Unambiguous (measurable and testable), traceable, complete, consistent, and acceptable to key stakeholders. Components include, functional requirements, non-functional requirements, quality requirements, and acceptance criteria. |
| Requirements Management Plan | A component of the project or program management plan that describes how requirements will be analyzed, documented, and managed. |
| Requirements Traceability Matrix | Links product requirements from their origin to the deliverables that satisfy them. |
| Rework | Action taken to bring a defective or nonconforming component into compliance with requirements or specifications. |
| Risk management plan | A component of the project, program, or portfolio management plan that describes how risk management activities will be structured and performed. |
| Risk responses | Risk responses are aligned with the prioritization of project constraints, such as budget, schedule, and performance. |
| Technical performance measures | Quantifiable measures of technical performance are used to ensure system components meet technical requirements. They provide insights into progress in achieving the technical solution. |

*PMBOK® Guide* covers traditional EVM topics including scheduling (including network diagrams), Performance Management Baseline, control accounts, work packages, earned value, variance analysis, estimate at completion, and MR.

Finally, the PMI maintains a certification program for expert use of the *PMBOK® Guide*. The experts receive the Project Management Professional (PMP) certification. Per PMI, "there are more than 1,000,000 PMP certification holders worldwide. They've earned universally recognized knowledge."

Currently, most contractors obtain specialized training for their employees to implement or maintain the narrowly used EIA-748 or hire consultants. The transition to a widely accepted standard may increase the supply of resources, reduce the training and salary costs for DOD EVM process specialists, and reduce program management costs.

Consequently, either a plan to adopt private sector best practices or a plan to migrate to a Government-unique standard that is consistent with the PMI documents and includes a tailored set of EVMS guidelines, is recommended. For federal agencies other than DOD, the first step down that path was the PMIAA mandate to OMB to establish standards and policies for executive agencies consistent with widely accepted standards for IPM planning and delivery.

One federal agency, the Dept. of Energy (DOE), established DOE-unique guides and policy that are consistent with the *PMBOK® Guide*. These are:

- DOE G 413.3-10B: 4-20-2022 SUBJECT: INTEGRATED PROJECT MANAGEMENT USING THE EARNED VALUE MANAGEMENT SYSTEM

- DOE G 413.3-7A Risk Management Guide
- DOE O 413.3B SUBJECT: PROGRAM AND PROJECT MANAGEMENT FOR THE ACQUISITION OF CAPITAL ASSETS

DOE's documents exceed the limited scope of the EIA-748 guidelines. They incorporate the technical baseline, integrating risk monitoring with EVM, and quality. See Appendix D for details.

For DOD, the Section 809 Panel took the first step down that path with its recognition that EVM does not measure product quality.

**Agencies Should Terminate Use of EIA-748 because it is Impractical**

The EVMS Standard was originally developed to be a 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.

Federal agencies should decide not to use EIA-748 as a VCS for IPM because it is impractical based on the following evaluation factors in Circular:

1. The prevalence of the use of the standard 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 is "***otherwise impractical***." It is not used prevalently in the national and international marketplaces by commercial enterprises. Most importantly, 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.

EIA-748 is also impractical per the criteria of *OMB Circular A-119 because,* per the accrediting organization's *SAE Executive Standards Committee Governance Policy* (SAE Policy), SAE standards are a documentation of broadly accepted ***engineering practices*** or specifications for a material, product, process, procedure or test method. Per the pending, draft EIA-748E, systems engineering is a "**Complementary** system or methodology that often interfaces with the EVMS." The draft EIA-748E does not document broadly accepted engineering practices and the SAE has no authority to approve it. Nor does EIA-748D. SAE should cancel EIA-748.

The DOD Software Modernization Strategy (SW Strat) includes a caveat that "contracting policies, processes, and ***standards*** must ***not hinder***, but empower the vision of this strategy." *The vision for software modernization is simple – "deliver resilient software capability at the speed of relevance. Resilience implies software that is **high-quality** and secure, able to withstand and recover in the face of challenging conditions."* The caveat in SW Stat further disqualifies EIA-748 from being used as a VCS for software-intensive major capability acquisitions. Additional information about SW Strat and the shortcomings of EIA-748 is contained in the complementary white paper, *Integrating the Embedded Software Path, Model-Based Systems Engineering, Modular Open System Approach, and Digital Engineering with Program Management*.

Finally, for DOD, the use of EIA-748 fails to serve DoD's program need, as defined by an overarching policy in DAS, 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." In the afore-mentioned SASC Senate Report 118-188, the Committee astutely recognizes that EIA-748 focuses on the work, *not the product*, in its statement, "EVM is a project management and reporting system that develops a baseline cost and schedule estimate for defined ***work scope*** and tracks progress and actual costs (of the work) compared to the baseline.

DOD and other agencies should **Buy Products that Work, not Statements of Work.**

**Agencies Should Terminate Use of EIA-748 because it is "Not Fit for Use"**

EIA-748 is "not fit for use" by the criteria of SAE Policy and OMB policies. Per SAE Policy, "determination that a document is not fit for use may be made when there is a government requirement that can only be accommodated by elimination of the document." The government requirement that has not been accommodated is in OMB Circular No. A–11 of the Capital Programming Guide. Per Appendix 6, "performance-based management systems (EVMS) must be used to provide contractor and Government management visibility on the achievement of, or deviation from, goals until the asset is accepted and operational. If goals are not being met, performance-based management systems allow for early identification of problems, potential corrective actions, and changes to the original goals needed to complete the investment and necessary for agency portfolio analysis decisions."

Per the reports by the Section 809 Panel and the Commission on PBBE Reform, EIA-748 does not accommodate the requirements, in Appendix 6, for management visibility on deviation from technical goals, early identification of problems, and potential corrective actions.

Also, per the OMB Capital Programming Guide, Acquisition Phase II, "The IPT must review the WBS to ensure that it completely defines the program scope of work and will provide the basis to extend the Contract WBS to achieve integrated cost, schedule, and technical performance management. EIA-748 is void of engineering practices for technical performance management.

Additional information is provided in Appendix F, Letter to OMB Director Vought, Subj: Recommendations to Request Cancellation of SAE/EIA-748 EVMS Standard, dated October 12, 2025.

**Requirement to Use EIA-748 is a Barrier to Entry for Non-Traditional Contractors**

The white paper, *Common Sense Project Management: "When you come to a fork in the road…",* cites the Section 809 Panel Report's finding that the DoD contract compliance oversight process is a barrier to entry for non-traditional defense contractors. That white paper also includes lists ten EVM guides from DoD and the NDIA Integrated Program Management Division with 918 pages of guidance.

The OMB VCS Circular states the "use of standards, if improperly conducted, can suppress free and fair competition; impede innovation and technical progress." This barrier to entry is reason enough to terminate use of EIA-748 as a VCS for IPM.

**ANSI vs. EIA**

The *PMI Standard for EVM* is accredited by ANSI. It was approved as *ANSI/PMI 19-006-2019* on 10/29/2019. Per the ANSI web site, accreditation by ANSI signifies that the procedures used by the standards body in

connection with the development of American National Standards meet the Institute's essential requirements for openness, balance, consensus, and due process.

In contrast, EIA-748, was approved by SAE. SAE was formerly the Society of Automotive Engineers. Per SAE, an SAE standard is a technical report, documentation of broadly accepted ***engineering practices or specifications for a material, product, process, procedure or test method***. Major acquisitions that cost over $100 M should be governed by a higher standard, an ANSI-accredited standard.

In my letter to Margaret Weichert, Deputy Director for Management, OMB, augments a previous recommendation for OMB to revise the *Capital Programming Guide* requirement to use an EVMS that meets the guidelines in EIA-748. The letter, dated Dec. 16, 2019, Subj: Recommendations to Improve Program Management and EVM, includes the following excerpts:

The following recommendations, if implemented, will fix the VCS problem in the *Capital Programming Guide* and help to close the GAO findings discussed above:

(1) Adopt the VCSs for IPM from the PMI, including ANSI/PMI 19-006-2019 in concert with *PMBOK® Guide*, instead of OMB-developed standards and

(2) Replace EIA-748 in the Capital Programming Guide with ANSI/PMI 19-006-2019 in concert with *PMBOK® Guide*

The bottom line: EIA-748 is not effective or suitable to meet the regulatory, procurement, or program needs of DOD and the other federal agencies.

**OMB Memo: Improving the Management of Federal Programs and Projects through Implementing the PMIAA, June 25, 2018**

On June 25, 2018, OMB issued a memo which establishes initial implementation guidance to begin a coordinated and Government-wide approach to strengthen IPM practices in Federal agencies and improve Government performance. The memo identified a provisional set of principle-based program management standards that should be applied to internal management processes and be incorporated or aligned with existing program management policies and processes. Appendix 4, Table 1 of the memo included "IPM Standards and Principles" that should be considered when developing IPM implementation plans. These standards and principles are in the areas of Contracting and Acquisition Management (regarding product scope), Project Management (especially keying in on the OMB definition of project which includes "product"), Requirements Management, and Risk Management. The *PMBOK® Guide* includes these same standards and principles, as described in Table 1 (of this white paper) ***PMBOK® Guide***

**Standards and Principles that are Absent from *EIA-748*.**

The language in the OMB memo is also less stringent than that of Circular. Circular also includes requirements that the agency determine if the standard is practical and effective. It is recommended that OMB and DOD resolve this discrepancy with the concurrence of the appropriate legislative oversight committees.

If the less stringent language in the OMB memo is retained, then agencies may utilize standards developed internally for managing agency programs, but they must generally align and be equivalent to the standards and principles described in Appendix 4, Table 1 of the OMB memo. In that case, agencies may develop

internal management processes that utilize a tailored, streamlined *EVMSIG* that is transformed into a Government-unique, internal standard. The transformed *EVMSIG* internal standard is based on principles derived from the *PMBOK® Guide*, such as those in Table 1, above.

**OPM/OMB Memo: PMIAA IPM Competencies**

Finally, on April 5, 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." The memo included four technical competencies which are absent from EIA-748:

1. 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.
2. Requirements Management - Knowledge of the principles and methods to identify, solicit, analyze, specify, design, and manage requirements.
3. Risk Management - Knowledge of the principles, methods, and tools used for risk assessment and mitigation, including assessment of failures and their consequences.
4. 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 (i.e., features, functions).

The *PMBOK® Guide* Standards and Principles in Table 1 are consistent with OPM/OMB objectives.

**Recommended Five Step Plan for Acquisition Reform**

It is recommended that DOD, OMB, and GAO implement the following five step, sequential plan.

Step 1: DOD actions:

- DOD review its policy, guidance, and instructions to determine if PMIAA is applicable to DOD because its provisions, regarding a widely accepted standard for program and project management, are *not* substantially similar to or duplicative of…policy, guidance, or instruction of the Department related to program management.
- DOD tailor *EVMSIG* and transform it into an internal, Government-unique standard that incorporates EVMS-lite recommendations. The internal standard will be based on a subset of EIA-748 guidelines and is tailored to accomplish the following objectives:
- Link EVM with systems engineering planning and execution, product scope, technical performance measurement (TPM) and risk management.
- Reduce DCMA compliance review costs.
- Reduce contractor compliance costs.
- DOD request to OMB, through the NIST, that EIA-748 be replaced with the DOD internal standard.
- DCMA discontinue compliance reviews of 12 EVMS Guidelines that are no longer value-added or cost-justified, as specified in EVMS-lite.
- DOD issue policy and guidance to provide award fee incentives for contractors to link EV to the product scope, TPM, risk management, and technical debt by complying with the five tailored

Guidelines in Table 3, below and/or by utilizing the award fee guidance and criteria in Eng Guidebook, as follows:

- **Eng Guidebook CH 2.5 SE Role in Contracting**
  - Another area to which incentives are tied is the EVMS. The PM should ensure that the EVMS, tied to any incentive, measures the quality and technical maturity of technical work products instead of just the quantity of work. If contracts include EV incentives, **the criteria should be stated clearly and should be based on technical performance**. EV incentives should be linked quantitatively with:
    - TPM
    - Progress against requirements
    - Development maturity
    - Exit criteria of life-cycle phases
    - Significant work packages and work products

- When using Agile methods, DOD issue policy and guidance to provide award fee incentives for contractors to exceed the Minimum Viable Capability Release (MVCR) requirements and the Minimum Viable Product (MVP), reduce the product backlog, and reduce technical debt.
- DOD revise policies, instructions, and guides to incorporate these recommendations.

Step 2: GAO actions:

1. Verify that DOD completed above actions.
2. 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).
3. 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.
4. Revise *Schedule Estimating Guide.*

Step 3: OMB approve DOD request to replace EIA-748 with the transformed *EVMSIG* standard.

Step 4: DOD establish a 5-year 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,* and the three *GAO Guides*.

Step 5: OMB revise *Capital Programming Guide* to sunset the use of EIA-748 and substitute an interim Government-unique standard based on a tailored, streamlined *EVMSIG*. The tailored *EVMSIG* standard will be based on *PMBOK® Guide* in concert with *ANSI/PMI 19-006-2019* and the three *GAO Guides*.

**EVMS-lite**

The rationale for and implementing details of this white paper were first included in my letter to Chairman Thornberry, 11/17/13, Subj: Expanded NDAA Defense Acquisition Reform - EV. The letter included recommendations that will result in a net *reduction* of costs for capital acquisitions by reducing regulatory (DFARS) requirements. Currently, contractors are required to comply with 32 guidelines in EIA-748. The recommendations in this document, if implemented, will *eliminate* requirements for contractors to comply with nine guidelines.

It is also recommended that DOD regulations be revised to require contractor compliance with five *amended* or *tailored* EVMS guidelines, to define "product scope," and to revise the definition of "statement of work" to include "product scope." However, compliance with the five tailored guidelines will not increase acquisition costs because contractors are already required to perform the tasks that are newly cited in those guidelines. Also, DOD program managers now need to obtain the information that will be submitted with the tailored guidelines and the definition of product scope to comply with recent AAF reforms in DAS and DOD Instruction 5000.88, *Engineering of Defense Systems.* The assertions regarding net cost reductions are augmented below.

**Eliminate Mandate to Comply with 9 Guidelines**

The rationale for eliminating compliance with nine guidelines includes:

1. Control and reporting by Work Breakdown Structure (WBS) is sufficient. There is no need for reporting by organization.
2. DCAA audits are sufficient; DCMA compliance review is redundant.
3. Compliance adds cost but no program management value.
4. They fail to meet objectives of *Capital Programming Guide* or of the *EVMSIG.*
   *a. Capital Programming Guide* objectives
      - Early identification of problems, potential corrective actions, and changes to the original goals needed to complete the investment and necessary for agency portfolio analysis decisions.
      - Rely on timely data produced by those systems for determining product-oriented contract status.

   b. *EVMSIG* objectives: "provide joint situational awareness of program status and to assess the cost, schedule, and technical performance of programs for proactive course correction."

5. They are not commercial IPM practices.

The nine guidelines are in Table 2.

| Table 2: Eliminate mandate to comply with 9 EIA-748 guidelines | | |
|---|---|---|
| **Guide-line #** | **Guideline Topic** | **Rationale to remove compliance requirement** |
| 2.1b | Identify organizational structure | Control by organization (OBS) is not cost-effective(a). Control by product (WBS) is sufficient. This guideline is a non-value added regulatory requirement (NVARR). |
| 2.1e | Measure performance by WBS or OBS | Control by product (WBS) is sufficient(a). (NVARR) |
| 2.2d | Identify cost elements (labor, material etc) | (NVARR) |
| 2.2f | Control account budget = sum of work and planning packages | (NVARR) |
| 2.2h | Establish OH budgets | DCAA audits are sufficient; DCMA compliance review is redundant. (NVARR) |
| 2.2j | Target cost goal is reconciled with sum of internal budgets plus MR | (NVARR) |
| 2.3d | Record indirect costs consistent with the OH budgets | DCAA audits are sufficient; DCMA compliance review is redundant. (NVARR) |
| 2.3f | Material accounting system provisions | DCAA Material Management and Accounting System (MMAS) audits are sufficient. DCMA compliance review is redundant. (NVARR) |
| 2.4d | Summarize variance analyses by OBS and/or WBS | Control by product (WBS) is sufficient(a). (NVARR) |

**Tailor Five Guidelines**

Five guidelines that should be tailored to close the Quality Gap and to add risk management are in Table 3. The tailoring will increase focus on technical requirements, requires use of TPMs, and add "product scope" including rework, technical debt, acceptance criteria (technical baseline) and risk responses to the authorized baseline.

The EAC guideline is modified to incorporate four elements:

1. The Agile methods elements, "product backlog," "technical debt," and MVCR/MVP which did not exist when the first EVMS standard was published.
2. "Risk responses," which is absent from EIA-748.
3. "Rework" and "technical debt" which are absent from EIA-748.

Contractors are already required to perform the following tasks in their statements of work. Requirements for systems engineering and risk management already cite the following:

1. "Product scope" is already referred to as "technical baseline"

2. "Acceptance criteria" are required by systems engineering requirements such as the SEP, Eng Guidebook, SE Guidebook, and the Integrated Master Plan (IMP)
3. "Risk responses" are required by systems engineering requirements
4. "Rework" and "technical debt" are normal task of engineering development and cost estimates. The proposed change only requires it to be broken out.
5. "TPMs" are not in the EIA-748D guidelines, only "technical performance goals." Furthermore, the use of technical performance *goals* is optional. The proposed change makes the use of TPMs mandatory and specifies that metrics be established to measure progress towards the goal.

I submitted a set of comments to the SAE to modernize draft EIA-748E, to transform it into a standard that provides management value, and to makes it consistent with elements of *PMBOK®* Guide and systems engineering standards. The comments are in Appendix E.

| Table 3: Modify language of 5 EIA-748 guidelines and the dictionary with regard to contractor compliance | | |
|---|---|---|
| **Guide-line # or Section** | **Guideline or Dictionary Topic** | **Tailored Guideline** |
| 1 | Define the authorized work. | Add, "Including the work necessary to produce the product scope of the program, including rework and risk responses." |
| 6 | Scheduling the work | ….requirements of the program.<br>Add "including the product scope (including acceptance criteria), rework, and risk responses."<br>Intent of Guideline: …see Guideline 10.<br>Add "when Agile methods are used to develop embedded software in weapons systems, use the product roadmap, product backlogs, and the MVP.<br>Typical Work Products: Add "when Agile methods are used, include product roadmap, product backlogs, and the MVP. |
| 7 | Identify physical products, milestones, technical performance goals, or other indicators that will be used to measure progress. | Add, "All technical performance measures that have been identified at major technical reviews shall be used to measure progress in appropriate work packages." |
| 27 | Develop revised estimates of cost at completion based on performance to date, commitment values for material, and estimates of future conditions. | Add, "Estimates of future conditions include rework, risk responses, and, when using Agile methods, technical debt and the product backlog." |
| 30 | Control retroactive changes. | Add, "Retroactive changes to earned value, including negative adjustments to correct cumulative earned value so that it is consistent with achieved vs. planned technical performance, must be made to improve the accuracy of performance measurement data." |
| EVMSIG 7.2 | Dictionary | Add "product scope":<br>"The product scope is the technical baseline and includes the features and functions that characterize a product or result and acceptance criteria." |
| EVMSIG 7.2 | Dictionary | Revise definition of "statement or work" to add "including the product scope." |

My recommendation to implement EVMS-lite were included in a white paper submitted as a consultant to PARCA in 2012. The white paper was the basis of an article in *CrossTalk, the Journal of Defense Software Engineering*; "Basing Earned Value on Technical Performance," Jan. 2013.

**Cost Estimate for *EVMS-lite* (Lower Costs)**

In my opinion, there will be a significant reduction in recurring, compliance review costs if *EVMS-lite* is implemented with elimination of compliance reviews for twelve EVMS guidelines offset by the additional costs for compliance reviews of the five tailored guidelines. Also, will be a net cost decrease to contractors and subcontractors by eliminating the requirement to comply with 12 EVMS guidelines. Of course, the most important consideration is that program managers will have better insight into program cost, schedule, and technical performance by receiving valid, reliable information.

Program managers expect contractors to utilize SE and risk management practices per AAF directives and guides DoDD 5000.01, DoDD 5000.02, DoDI 5000.87, and DoDI 5000.88. These SE and risk management practices and related work products, including technical performance parameters are either absent from or not required by EIA-748. However, they are elements of PMBOK® Guide Standards and Principles that are in Table 1.

**Employ DoD Digital Engineering Strategy to Lower Costs, Close the Quality Gap**

Table 4 cites the DoD Digital Engineering 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.

The use of completed DE artifacts as the base measures of EV will 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.

The GAO Schedule Estimating Guide does not recommend recording progress by entering percentage complete because…estimating a percentage of work or time complete is an inexact science, whereas activity managers and schedulers are accustomed to estimating remaining duration.

The following information was derived from the article, "Basing EV on Technical Performance," in *CrossTalk, the Journal of Defense Software Engineering*, Feb. 2013.

**Fallacy of % Complete EV Technique**

1. Ignores technical performance
   - % of drawings, lines of code, test points is "objective" but, as practiced, may indicate original plan, not current estimate
2. Misleading if denominator increases
   - *"Hold"* % at 95% until done; Common practice (trick?)
   - Numerator may include rework
   - DAG 4.3.3.4.2 (Critical Design Review) propagates the fallacy
     - Rule of thumb: 75%-90% of…product drawings, software design specifications and associated instructions…complete
3. EV and the cost performance may be overstated when…based on % of drawings or code completed without regard to the technical maturity of the evolving design. As a result, the EAC may be understated."

**Source: Basing Earned Value on Technical Performance, CrossTalk—January/February 2013**

Goal 1 of DE Strat is to formalize the development, integration, and use of models to inform enterprise and program decision making. Excerpts follow.

**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***.

Goal 2 of DE Strat is to provide an enduring, authoritative source of truth (ASOT). Excerpts follow.

**Use the ASOT as the technical baseline**

Stakeholders should use the ASOT to make informed and timely decisions to manage ***cost, schedule, performance, and risks***. For example, contract deliverables should be traced and validated from the authoritative source of truth. This will allow stakeholders at various levels to respond knowledgeably to the development…of the system, thereby avoiding technical and management barriers to mission success.

**Use the ASOT to produce digital artifacts, support reviews, and inform decisions**

As the technical baseline matures…Stakeholders will generate digital artifacts.

**Authoritative Sources for Tailored Guidelines**

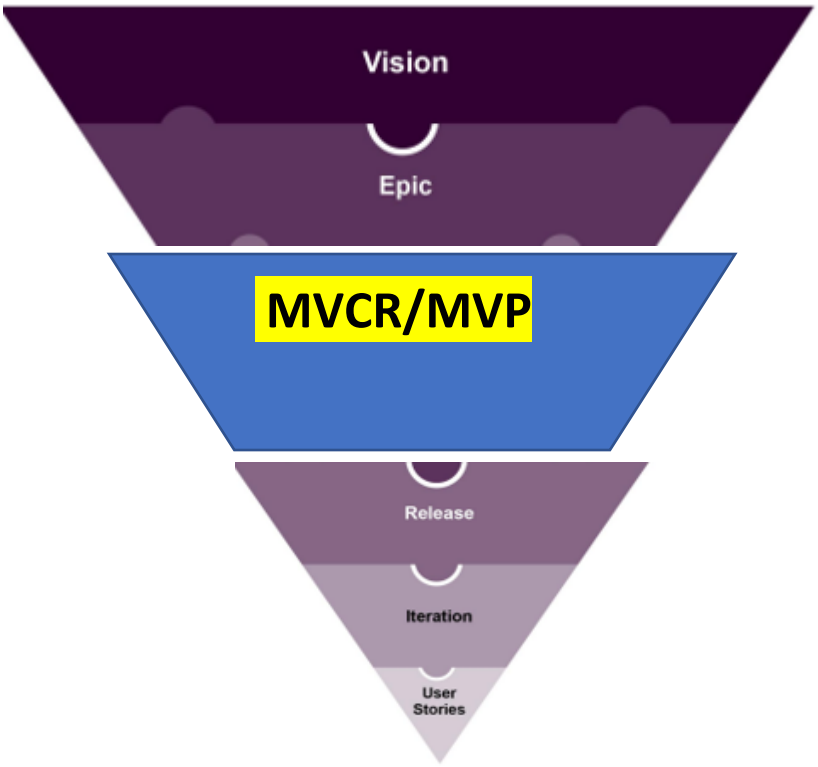
The tailored guidelines are consistent with the following documents:

- GAO Agile Assessment Guide (GAO Agile)
- *GAO Cost Estimating and Assessment Guide, Best Practices for Developing and Managing Program Costs* (GAO Cost)
- *GAO Schedule Estimating Guide* (GAO Schedule)
- AAF directives and guides (including the Eng Guidebook and SE Guidebook and the recently revised SEP), DE Strategy
- SW Strat

Pertinent excerpts from these documents are included in Table 4.

**Table 4: Elements of GAO Guides** and **AAF Directives and Guides Needed in Tailored Guidelines**

| **GAO or AAF Document** | **Section** | **Excerpt**<br>**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.<br><br>This guide considers both product backlog items and user stories to be a form 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. (Should be 7 levels, per Note)<br><br>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). |

| Table 4: Elements of GAO Guides and AAF Directives and Guides Needed in Tailored Guidelines | | |
|---|---|---|
| **GAO or AAF Document** | **Section** | **Excerpt**<br>**Note: parenthesized comments are not in document)** |
| | |  |
| GAO Agile | Appendix 2 | MVP |
| GAO Cost | Chapter 7 | 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 18 | Determine which performance measures will be used to objectively determine when work is completed. These measures are used to report progress in achieving milestones and should be integrated with technical performance measures.<br><br>Progress and milestone events should represent measurable performance in terms of quality and technical performance as well as cost and schedule.<br><br>Measures used to report progress in achieving milestones should be integrated with technical performance measures.<br><br>Management should use the EVM data captured by the CPR data to integrate cost and schedule performance data with technical performance measures |

| **Table 4: Elements of GAO Guides** and **AAF Directives and Guides Needed in Tailored Guidelines** | | |
|---|---|---|
| **GAO or AAF Document** | **Section** | **Excerpt**<br>**Note: parenthesized comments are not in document)** |
| GAO Schedule | Updating Duration of Work | Updating duration is the most common method of recording progress because it is the easiest to do…an updated estimate of time remaining on the activity is entered. The scheduling software calculates percentage complete for the activity based on actual duration and planned remaining duration.<br>Recording progress by entering percentage complete is not recommended, because scheduling software adjusts the remaining duration to yield the entered percentage complete. Estimating a percentage of work or time complete is an inexact science, whereas activity managers and schedulers are accustomed to estimating remaining duration. |
| 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.<br><br>"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. |
| 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.<br>Develop and maintain program backlogs that identify detailed user needs in prioritized lists. |

| **Table 4: Elements of GAO Guides** and **AAF Directives and Guides Needed in Tailored Guidelines** | | |
|---|---|---|
| **GAO or AAF Document** | **Section** | **Excerpt**<br>**Note: parenthesized comments are not in document)** |
| 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:<br>(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.<br>(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.<br>(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.***<br>(k) The timing, conduct, and ***entry and exit criteria for technical reviews***.<br>(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***. |
| 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***. |

| **Table 4: Elements of GAO Guides** and **AAF Directives and Guides Needed in Tailored Guidelines** | | |
|---|---|---|
| **GAO or AAF Document** | **Section** | **Excerpt**<br>**Note: parenthesized comments are not in document)** |
| DE Strat | 2.3 Use the authoritative source of truth across the lifecycle | As the ***technical baseline*** matures…stakeholders will generate ***digital artifacts***.<br><br>Use the authoritative source of truth to:<br>1. ***produce digital artifacts***, support reviews, and inform decisions<br>2. 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.<br><br>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. |
| 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.<br><br>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 |

| **Table 4: Elements of GAO Guides** and **AAF Directives and Guides Needed in Tailored Guidelines** | | |
|---|---|---|
| **GAO or AAF Document** | **Section** | **Excerpt**<br>**Note: parenthesized comments are not in document)** |
| | | 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.<br><br>This section should include:<br><br>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<br><br>SE leading indicators to provide insight into the system technical maturation relative to a baseline plan<br><br>The maturation strategy, assumptions, reporting methodology, and maturation plans for each metric with each performance metric traced to system requirements and mission capability characteristics<br><br>Whether any contractual provisions relate to meeting TPM goals or objectives<br><br>Description of how models, simulations, the digital ecosystem, and digital artifacts will be used to support TPM tracking and reporting.<br><br>Description of the traceability among Key Performance Parameters; KSAs; key technical risks and identified TPMs.<br><br>Identify SW measures for SW technical performance, process, progress, and quality. |

Additional information on lowering costs is provided in Appendix B, Letter to Kevin Fahey, Subj: Enhance AAF by Publishing a "Government-unique standard" for Earned Value Management Systems, dated Dec. 2, 2020.

**Implementation of alignment with or adoption of *PMBOK® Guide* and *PMI EVM Standard***

To be cost effective, it is important to specify which elements of *PMBOK® Guide* and the *PMI EVM Standard* should be cited and reviewed for incorporation into IPM policies and processes. I recommend that the scope be narrow and be focused on the topics in Table 3 plus requirements traceability, risk management, and procurement management.

The specific recommended actions follow:
Replace requirement to comply with EIA-748 guidelines with requirement to comply with the tailored, streamlined *EVMSIG* standard to be developed based on the *PMBOK® Guide*.

Acquisition Data and Analytics shall develop compliance guidelines based on the *PMBOK® Guide* and shall publish the new guidelines in a transformation of the *EVMSIG*. The transformation will be renamed "DOD Program and Project Management Internal Standard (IPMIS)."
The IPMIS should be based on the following:

The PPMIS equivalent of 20 EIA-748 earned value guidelines remaining after eliminating the 12 guidelines in Table 2.

ii. The tailored guidelines in Table 3.

iii. Guidelines to be developed that incorporate the standards and principles of Table 1.

DCMA will revise its compliance review procedures and metrics to cover compliance with the IPMIS (Appendix C).

DCMA will retrain or augment its compliance review staff to add the systems engineering skills necessary to review compliance with the topics in the guidelines to be developed that incorporate the standards and principles of Table 1.

It is important to note that the use of the "product scope" is optional in the *PMBOK® Guide*. Therefore, the wording of the new guidelines and the IPMIS should unambiguously require use of the product scope to preclude contractors from continuing to exploit the "Quality Gap" loophole.

**Conclusion**

DOD and OMB should discontinue use of EIA-748 because it is impractical and ineffective. It fails to serve OMB and DOD's procurement and IPM needs and is not a commercial practice. It has failed to keep current with changes in the state of knowledge and technology and is less useful than the PMBOK® Guide. The end of the path should be a set of internal management processes and/or a VCS for IPM, as required by the PMIAA, and OMB/OPM policy. *PMBOK® Guide* is the most widely accepted IPM VCS and its components should be included in the internal management processes.

The recommendations above are needed to fulfill the visions of EVM's founders, to implement the acquisition reforms and legislative intentions of senators and congressmen, to halt systemic findings like those in the DOD Report, to comply with the PMIAA, and to reduce costs.

EIA-748 guidelines focus on the ***statement of work***, not **product scope** or the results to be achieved. 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**." Also, *PMBOK® Guide* includes Quality as one of twelve principles of project management.

In other words, **Buy Products that Work, not Statements 0f Work**."

But wait. There's more. The white paper, *Earned Value Management: "When you come to a fork in the road…,"* includes best practices and metrics for IPM with no need for a Government-unique internal standard for EVM or EVM compliance reviews. Those practices, "Something of Value," meet the PBBE Commission's call for performance metrics that provide information on the *value received.* The "fork" paper calls for replacing EIA-748, which lacks management value, with Something of Value.

Note: All articles and references, except the PARCA white paper, are available at www.pb-ev.com.

**Appendix B** Letter to Mr. Kevin Fahey, Asst. Secretary of Defense for Acquisition, dated 12/2/20

Subj: Enhance AAF by Publishing a "Government-unique standard" for Earned Value Management Systems

Dear Mr. Fahey:

This letter augments my previous letter, Subj: New PMI Standard for Earned Value Management: Comparison with EIA-748 and Recommendations to Reduce Costs of DCMA EVMS Compliance Reviews, dated Dec. 9, 2019.

It includes a recommendation that you can initiate now to:

> Reduce the costs of Major Capability Acquisitions
>
> Provide a practical and contractual vehicle to meet the objectives of the Adaptive Acquisition Framework (AAF).
>
> Implement a "Government-unique standard" for Program/Project Management that is "in accordance with standards accredited by ANSI," as specified in the pending NDAA for FY 2021.

### Recommendation

*Recommendation: DOD revise, streamline, and transform the "DOD Earned Value Management System Implementation Guide" (EVMSIG) and impose it on contractors as a "Government-unique standard" in lieu of EIA-748.*

Compared with the current 32, regulatory Guidelines in EIA-748, the new standard will have 12 fewer guidelines (lower costs) and 4 tailored guidelines. The tailored guidelines will not cause costs to increase. Although revised, the tailored guidelines impose no additional requirements. They just explicitly cite the "technical baseline" and "risk mitigation actions" which are already in EVMSIG.

### Additional Support, not in white paper

New, contractual requirements to use the tailored and streamlined guidelines will decrease, not increase costs. Contractors have been expected to link EVM with risk mitigation actions and TPMs actions per the DOD EVMSIG. Excerpts from Guidelines 1, 6, 7, and 32 follow.

**EVMSIG**

"Risk responses" are included in Guidelines 1 and 6 in the proposed DOD-unique standard for EVMS.

The "technical baseline" and/or Technical Performance Measures (TPM) are included in Guidelines 1, 7 and 32.

**Guideline 1: Define the Authorized Work Elements**

Management Value: Using a disciplined, systematic change control process to document PMB changes assures that all program stakeholders are using the same cost, schedule, and technical baselines to measure contract performance.

**Guideline 6: Scheduling Work**

Intent of Guideline:
Scheduling status process shall include the following:
• Incorporation and progress of risk management activities and mitigation actions.

**Guideline 7: Identify Products and Milestones for Progress Assessment**

Management Value: A key feature of the vertically and horizontally integrated network schedule is that it establishes and maintains the relationship between technical achievement and progress statusing through time. …Identifying objective criteria, linked to technical progress indicators, ensures performance assessments reflect the true technical performance of the program.

Intent of Guideline: Using objective technical acceptance criteria and performance indicators that are consistent with the work scope contained in the Work Breakdown Structure (WBS) will facilitate meaningful assessments of program accomplishment. Objective technical performance goals and measures are incorporated throughout the schedule hierarchy based on the completion criteria developed for each increment of work, in order to limit subjective measurement of work accomplished. Objectively measured performance data that accurately reflects technical accomplishment of the work provides program management visibility into program progress and credible early indications of program problems and the need to take corrective action.

Attributes: • Objective completion criteria aligned with the accomplishment of the program's technical requirements and goals are determined in advance, documented, and used to plan and measure the progress of program milestones and events.

**Guideline 32: Document PMB Changes**

Management Value: Using a disciplined, systematic change control process to document PMB changes assures that all program stakeholders are using the same cost, schedule, and technical baselines to measure contract performance.

## AAF/Kevin Fahey Tailoring Guidance

This recommendation supports AAF guidance, as provided at the "Tailoring Guidance" tab of the AAF website, in the following excerpts:

> In addition, PMs will:
>
> "Tailor in" the regulatory information requirements that will be used to describe the
>
> management of the program
>
> Statutory requirements will not be waived unless a statute permits.

Link to your DAU article, "DoD's Transformational Adaptive Acquisition Framework," 11/5/19

> "the most transformational change to acquisition policy in decades that will embrace the delegation of decision-making, tailor program oversight to ***minimize unnecessary bureaucratic processes***, and actively manage risk based on the unique characteristics of the capability being acquired.".

## National Defense Strategy

The current National Defense Strategy includes "Deliver Performance at the Speed of Relevance." Implementation of this recommendation will augment that strategy by enabling DOD to “Buy Products that Work, not Statements of Work.”

Please contact me for additional information or support.

Paul J. Solomon
paul.solomon@pb-ev.com

cc:

Mr. Andrew Hunter, Biden-Harris Transition Team
Sen. Kamala Harris, Homeland Security and Governmental Affairs Committee
Chairman Adam Smith, HASC

## Appendix C

## Excerpts from Letter to DCMA Director LTG Bassett, Subj: DCMA EVMS Compliance Procedures and Metrics Ignore TPM, dated May 16, 2021

Both the DCMA EVMS compliance procedures and the DCMA EVMS Compliance Metrics (DECM) are silent on technical performance. Consequently, there is no assurance that the DCMA EVMS Center can accomplish its mission of "assessing contractor effectiveness which provides stakeholders with expectations of future performance and potential impacts on individual contractors and/or programs."

**OMB and DOD Needs for Effective Technical Performance Measurement (TPM)**

The need for TPM, integrated with EVM, is stated in OMB and DOD guides, as follows.

> The OMB Capital Programming Guide provides guidance for contractors to "achieve integrated cost, schedule, and technical performance management using EVM during systems acquisitions."
> The DOD EVMS Implementation Guide (EVMSIG) states:
> "Objective technical performance goals and measures are incorporated throughout the schedule hierarchy based on the completion criteria."
> "Technical progress indicators, ensures performance assessments reflect the true technical performance of the program."

Please expand the scope of DECMs and DCMA EVMS compliance reviews to include the effective use of TPMs. Support OMB and DOD needs for integrated TPM and EVM.

## Appendix D Excerpts from DOE Policy and Guides

**DOE G 413.3-10B**

…compares cost and schedule performance with the technical baseline plan as an early warning indicator of project execution problems.

**DOE G 413.3-7A**

Integrated risk monitoring occurs when risk management metric monitoring is integrated with other standard project metrics such as earned value…metrics.

**DOE O 413.3B**

Baseline: A quantitative definition of cost, schedule and ***technical performance*** that serves as a base or standard for measurement and control during the performance of an effort;

From these sources, DOE has identified…13 IPM principles, which rely on the EVMS to support effective management and decision making:

Through daily control account (CA) management, CAMs use the EVMS as a vital tool to anticipate variances in schedule, cost, and ***quality***.

6.2.6 IMP Principle 6—Integrate Project Scope, Schedule, and Budget with the ***Quality*** of work

• The scope constraint refers to what is done to produce the product or the project's result to ***customer specifications (quality).***


**Figure 7. Triple Constraint**

**Appendix E Comments Submitted to SAE to Modernize Draft EIA 748E**

| **Comments and Suggested Resolutions to Modernize Draft EIA 748E** | | | |
|---|---|---|---|
| **Section** | **Comment** (Notes) | **Suggested Resolution** | |
| **Guideline (GL)** | | **Is:** | **Should be:** |
| Foreward/ Para. 1 | Note 1 | The EVMS guidelines incorporate best business practices to provide strong benefits for program enterprise planning and control. The processes include integration of program scope, schedule, and cost objectives. | The EVMS guidelines incorporate best business practices to provide strong benefits for program enterprise planning and control. The processes include integration of program product scope, work scope, schedule, and cost objectives. |
| 2.1a GL 1 | Note 1 | Define the authorized work elements for the program. A product-oriented work breakdown structure, tailored for effective internal management. control, is commonly used in this process. | Add, "Including the work necessary to produce the product scope of the program, including rework and risk responses." |
| 2.2c GL 7 | Note 1 | Establish and maintain a time-phased budget baseline comprised of scope, schedule and budget at the control account level. Budget for far-term efforts may be held in higher-level accounts until an appropriate time for allocation at the control account level. Initial budgets established for performance measurement are based on either internal management goals or the external customer negotiated target cost including estimates for authorized but undefinitized work. | Add "including the product scope (including acceptance criteria), rework, and risk responses." |
| 2.4d GL 20 | Note 1 | Using the results of control account variance analysis and indirect performance evaluations, update the control account estimates at completion to reflect future | Add, "Estimates of future conditions include rework, risk responses, and, when using Agile methods, |

| | | | |
|---|---|---|---|
| | | resource requirements to complete the remaining authorized work and, by comparing to budgets, calculate the variance at completion. | technical debt and the product backlog." |
| 2.5c GL 26 | Note 1 | Control retroactive changes to records pertaining to work performed that would change previously reported amounts for actual costs, earned value, or budgets. Adjustments are made only for correction of errors, routine accounting adjustments, or effects of customer or management directed changes, including implementation of a single point adjustment. | Add, "Retroactive changes to earned value, including negative adjustments to correct cumulative earned value so that it is consistent with achieved vs. planned technical performance, must be made to improve the accuracy of performance measurement data. " |
| 2.6 Common Terminology | Note 1 | "Product Scope" not in EIA-748D | Add:<br>"Product Scope": the features and functions that characterize a product, service, or result. |
| 2.6 Common Terminology | Note 1 | Statement of Work (SOW):<br><br>Document that communicates the program's work scope requirements and defines the technical requirements to the fullest extent possible. It is the basis for the work breakdown structure, establishing program schedules and budgets, assigning work to work teams, and assessing program risks or opportunities. | Add, "Including the work necessary to produce the product scope of the program, including rework and risk responses." |
| 3.7.1 Discrete Effort | Note 2 | Management assessment may be used to determine the percentage of work completed for a task or group of tasks. Earned value is then calculated by applying that percentage to the total budget for the work. Management assessment may include the use of metrics for work measurement. | Management assessment may be used to determine the percentage of work completed for a task, group of tasks, *or objective indicators for which the denominator is the estimated quantity used to determine the estimate at completion, not the quantity used to determine the budget at completion.*` Earned value is then calculated by |

| | | | |
|---|---|---|---|
| | | | applying that percentage to the total budget for the work. Management assessment may include the use of metrics for work measurement.<br><br>Generally, the objective earned value techniques (valued milestone or standard hours) are preferred, but each has its own merits and an organization should use those that best suit its management needs. ~~A note of caution is to avoid artificial constraints on earnings such as a percentage limit on earnings in a work package pending closure of the ending milestone.~~ |
| | | Generally, the objective earned value techniques (valued milestone or standard hours) are preferred, but each has its own merits and an organization should use those that best suit its management needs. A note of caution is to avoid artificial constraints on earnings such as a percentage limit on earnings in a work package pending closure of the ending milestone. | |

Note 1: EIA-748 fails to enable Integrated Program Management (IPM) because the guidelines cite only the work scope and are silent on the product scope or technical baseline. A reset of EIA-748 should incorporate the product scope to attain the schedule and cost benefits of the digital engineering ecosystem and to ensure requirements traceability from the technical baseline to the schedule. The comments that will follow will also incorporate DoD policy and guidance such as DOD INSTRUCTION 5000.97 DIGITAL ENGINEERING (DE), DoDI 5000.87, ISO/IEC/IEEE 15288 etc.

Detailed rationale and recommendations for DE are provided in the white papers at www.pb-ev.com.

Note 2: When determining percent complete, it is a common malpractice to use the quantity of tasks, drawings, or other objectives that was used to establish the performance management baseline. Normally, the original number is too low and there is growth because of "more complexity, rework etc. It is a common malpractice to retain the baselined quantity as the denominator. This leads to a fast run up to an overstated percent complete, cost performance index etc. Sometimes, the control account manager "hold" percent complete at an artificially constrained percent limit. This misleading result can be avoided by using the estimated quantity at completion as the denominator.

The following information was derived from the article, “Basing EV on Technical Performance,” in CrossTalk, the Journal of Defense Software Engineering, Feb. 2013.

Fallacy of % Complete EV Technique

1. Ignores technical performance

• % of drawings, lines of code, test points is “objective” but, as practiced, may indicate original plan,

not current estimate
2. Misleading if denominator increases
• “Hold” % at 95% until done; Common practice (trick?)
• Numerator may include rework
• Rule of thumb: 75%-90% of…product drawings, software design specifications and associated instructions…complete
3. EV and the cost performance may be overstated when…based on % of drawings or code completed without regard to the technical maturity of the evolving design. As a result, the EAC may be understated.”

**Appendix F, Letter to OMB Director Vought**

**Paul Solomon**
**3307 Meadow Oak Drive**
**Westlake Village, CA 91361**

October 12, 2025

The Honorable Russell Vought
Director, Office of Management and Budget
725 17th St., NW
Washington, DC 20503

Subj: Recommendations to Request Cancellation of SAE/EIA-748 Earned Value Management System Standard

Dear OMB Director Vought:

This letter augments my letter to you on August 24, 2025, Subj: When you come to a fork in the road…" Part 2. Please request that SAE International cancel the EIA-748D Earned Value Management System (EVMS) Standard because the Office of Management and Budget (OMB) deems it to be "not fit for use." It does not meet the criteria of OMB Circular A-119 Federal Participation in the Development and Use of Voluntary Consensus Standards.

EIA-748 does not meet the OMB technical performance criteria in its *Capital Programming Guide* that:

1. A performance-based management system should be used to monitor contractor performance in achieving the cost, schedule, and performance goals during the contract period.

2. The Integrated product team must review the Work Breakdown Structure (WBS) to ensure that it will provide the basis to extend the Contract WBS to achieve integrated cost, schedule, and technical performance management.

Also, EIA-748 does not contain specific performance requirements that are required by SAE for a standard that is 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.

The absence of metrics is also cited in my letter to you dated September 17. It notes that the draft EIA-748E is silent on the MOSA best practices or metrics in addition to its failure to address other engineering best practices such as digital engineering and systems engineering.