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The Honorable Gen. B. Chance Saltzman
Chief of Space Operations
United States Space Force.

Subj: Space Force Digital Engineering Ecosystem and Earned Value Management

Dear Hon. Gen Saltzman:



Last month, I was proud to attend a retirement ceremony for my wife's cousin, Derek Law. He retired from the Space Force. Earlier in his career, I advised him to get a master's degree in systems engineering (SE) from the Naval Postgraduate School. He did and made significant contributions to the AF and Space Command.

In April 2023, Gen. Thompson committed to the House Subcommittee on Readiness to develop and deliver a digital engineering (DE) ecosystem that enables the Space Force to rapidly mature innovative concepts into integrated solutions and deliver warfighting capabilities faster. Please consider my advice for the Space Force's success.

First, per my letter to Hon. NDIA Pres. Norquist, Subj: Pending Statutory Requirement for DE, dated Sept. 6, 2025, the Senate version of the NDAA for FY 2026, S.2296, cites Sec. 220B. If passed, the NDAA will make the use of DE a statutory requirement. Excerpt: "The guidance and manual should include integrating modeling and simulation at every level, from enterprise to individual operation, including utilizing DE." Please consider my recommendations to integrate DE with SE and program management.

Second, my letter to Hon. Emil Michael, Subj: Advana, Maven Smart Systems, and Digital Engineering, dated August 19, 2025 includes elements of a recommended path forward for Advana and Maven Smart Systems that details platform transition considerations and required authorities. The path forward to a DE ecosystem should include the elements of a DE ecosystem that include the capabilities, output-based metrics, engineering best practices, and digital artifacts specified in two Defense Acquisition Magazine articles that I authored:

1. "Better Program Management Through Digital Engineering", May/June 2022
2. "Better Program Management Through Digital Engineering Updated," July/August 2025

Third, my letter to Hon. SAF Meink, Subj: B-2 Success Stories; 2000 and 2025, dated June 27, 2025, cited recommendations in the white paper entitled "Integrating the Embedded Software Path, Model-Based Systems Engineering, MOSA, and Digital Engineering with Program Management."

Integrating DE with program management was endorsed in a letter from Lt. Gen Duke Richardson when he was at SAFAQ, dated February 2, 2022, included the following excerpt:

The Department of the Air Force supports Ms. Shyu and her goals to modernize systems engineering processes while leveraging digital engineering and model-based systems engineering. I have provided a copy of your letter and white paper *Integrating the Embedded Software Path, MBSE, and DE with Program Management* to my staff for their consideration as they modernize acquisition policy to take full advantage of digital engineering and to enable the use of digital artifacts that accelerate our development, manufacturing, sustainment, and operations of warfighter capabilities. We agree the institutionalization of “going digital” must include program management if we are to be successful. We are collaborating with the Office of the Secretary of Defense to improve current directives, instructions, and guides to evolve systems engineering and program management practices with regards to utilization of digital engineering and model-based acquisition. Your recommendations are appreciated.

Earned Value Management (EVM), as prescribed by EIA-748, is Logically Inconsistent with DE

As stated in my letter to the Hon. NDIA Pres. Norquist, Subj: Pending Statutory Requirement for DE, dated Sept. 6, The continued use of EIA-748, which is silent on engineering practices, DE, and the product scope, is antithetical to the effective use of DE and to attaining the schedule and cost benefits of the DE ecosystem. There is nothing in the draft EIA-748E that will support the objectives of the SASC, as stated in Sec. 220B. SASC objectives include better and faster delivery of capabilities.

A contractor may be compliant with the draft EIA-748E guidelines and simultaneously deliver cost and schedule performance reports that are based on manipulated, botched metrics. DOD INSTRUCTION 5000.97 DE states that schedules are digital artifacts that can be dynamically generated directly from digital models and created from the standards, rules, tools, and infrastructure within a DE ecosystem. However, earned value is based on the quantity of work performed and not on Authoritative Sources of Truth (ASoT) from the DE ecosystem. So, a program’s EVM process and practices may be assessed by DCMA as compliant with the draft EIA-748E guidelines not adherent to DOD INSTRUCTION 5000.97 DE policy in the Appendix. That program’s performance reports are not based on ASoTs. The two documents are logically inconsistent and mutually exclusive with regard to engineering practices. Please implement my recommendations into the Space Force DE ecosystem.

Yours truly,



Paul Solomon

CC:

Hon. Adam Smith, HASC
Hon. Mike Rogers, HASC
Hon. Roger Wicker, SASC
Hon. Dan Driscoll, Sec. of the Army
Hon. SON John Phelan
Jon Sindreu, WSJ
Meg O’Keefe SAE G-47 SE Committee

Hon. USD Michael Duffey
Hon. David Norquist NDIA
Hon. Troy Meink, Sec. of the Air Force
Russell Vought, Director, OMB
Dep. Sec. Defense Hon. Stephen Feinberg,
Anthony Capaccio, Bloomberg News
John Evers SAE G-47 SE Committee

Appendix DOD INSTRUCTION 5000.97DE Excerpts

1.2. POLICY.

- a. ...the DoD will use DE methodologies, technologies, and practices across the life cycle of defense acquisition programs, systems, and systems of systems to support research, engineering, and management activities.
- b. DE must be addressed in the acquisition strategy, including how and when DE will be used in the system life cycle and expected benefits of its use. In addition, as specified in DoDI 5000.88, certain programs must include a DE implementation plan in the SE plan.
- c. DE requires planning and providing financial and other resources for digital methods (e.g., model-based systems engineering (MBSE), product life-cycle management, computer aided design) in support of program activities to the maximum extent possible.

2.7. DOD COMPONENT HEADS WITH ACQUISITION AUTHORITY.

The DoD Component heads with acquisition authority:

- a. Implement the procedures outlined in this issuance., and
- e. Through their acquisition executive(s):
 - (1) Guide their acquisition programs' incorporation of DE practices into their system requirements, **cost, business**, development, testing, evaluation, production, and sustainment efforts.
 - (2) Provide **guidance and support for program managers (PMs) to develop, validate**, and maintain:
 - (a) **Credible and coherent authoritative sources of truth** shared with stakeholders.
 - (b) Digital models that accurately reflect the architecture, attributes, and behaviors of the system they represent.

3.1. DIGITAL ENGINEERING (DE)

- b. Expands on engineering practices to take full advantage of computation, visualization, and collaboration to enable faster, smarter, **data-driven decisions** throughout the system life cycle. DE should enable faster, higher-quality decision making in weapon system design, development, testing, fielding, and sustainment. These improved decision operations will enable more rapid delivery of warfighting capabilities to the field.
- c. **Uses computer systems** for the development, verification, validation, use, curation, configuration management, and maintenance of technically accurate digital models in support of system life-cycle activities. These models capture system representations and, together with their underlying data, provide an **authoritative source of truth** to stakeholders.
- d. **Moves the primary means of communicating system information from documents to digital models and their underlying data.** Digital models become ubiquitous and central to how engineering activities are performed.

3.5. PROCEDURES FOR MAINTAINING DIGITAL MODELS AND AUTHORITATIVE DATA SOURCES.

- b. Authoritative Data. Programs should develop and implement plans to establish current, consistent, enduring, and **authoritative sources of truth for digital models and data.**