

**Paul Solomon**  
**3307 Meadow Oak Drive**  
**Westlake Village, CA 91361**  
Paul.solomon@pb-ev.com

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The Honorable Heidi Shyu  
Office of the Under Secretary of Defense, Research and Engineering (USD(R&E))  
The Pentagon, Washington, DC 20301

Subject: Improve DoDI 5000.89, T&E, regarding Technical Debt and Deferred  
Functionality

Dear USD Shyu:

This letter augments my letter dated July 7 which had a recommendation regarding the *DoD Risk, Issue, and Opportunity Management Guide for Defense Acquisition Programs* regarding technical debt. The recommendations herein are applicable to DoDI 5000.89 which is silent on technical debt and deferred functionality.

The recommendations apply to Section 5.1, DT&E Overview

**Is:**

DT&E activities support data generation for independent evaluations. They also provide program engineers and decision-makers with information to measure progress, identify problems, characterize system capabilities and limitations, and manage technical and programmatic risks. PMs use DT&E activities to manage and reduce risks during development, verify that products are compliant with contractual and technical requirements, prepare for OT, and inform decision-makers throughout the program life cycle. DT&E results verify exit criteria to ensure adequate progress before investment commitments or initiation of phases of the program, and as the basis for contract **incentives**.

a. DT&E starts with capability requirements and continues through product development, delivery, and acceptance; transition to OT&E; production; and operations and support. Consideration of DT&E in the requirements and systems engineering processes ensures that capability requirements are measurable, testable, and achievable. Identifying and correcting **deficiencies** early is less costly than discovering system deficiencies late in the acquisition process.

**Should Be:** (add yellow highlights)

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verify that products are compliant with contractual and technical requirements, prepare for OT, and inform decision-makers throughout the program life cycle. DT&E results verify exit criteria to ensure adequate progress before investment commitments or initiation of phases of the program, as the basis for contract incentives, **and to ensure that deferred functionality and technical debt are identified and incorporated into corrective actions and the product backlog.**

a. DT&E starts with capability requirements and continues through product development, delivery, and acceptance; transition to OT&E; production; and operations and support. Consideration of DT&E in the requirements and systems engineering processes ensures that capability requirements are measurable, testable, and achievable. Identifying and correcting deficiencies, **including deferred functionality and technical debt**, early is less costly than discovering system deficiencies late in the acquisition process.

FYI, the attached “CrossTalk” article, *Practical Software Measurement, Performance-Based Earned Value*, Sept. 2001, includes practical advice to plan and account for testable requirements, defects, rework and deferred functionality.



Paul Solomon

CC:

The Hon. William La Plante USD(A&S)  
The Hon. Andrew Hunter, AF Asst. Sec. for AT&L