JUN – 3 2011

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Test and Evaluation of Defense Programs

The Defense Acquisition Executive (DAE) recently chartered an independent team to assess expressed concerns that the Department's developmental and operational test communities' approach to testing drives undue requirements, excessive cost, and added schedule into programs and results in a state of tension between Program Offices and the Testing Community. Concurrently, the Director, Operational Test and Evaluation (DOT&E), and the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation conducted a systematic review of recent programs to address the question of whether testing increases costs and delays programs and, if so, by how much. The results of both efforts indicate that testing and test requirements by themselves do not generally cause major program delays. However, other problems were identified.

More specifically, the DAE assessment team "found no significant evidence that the testing community typically drives unplanned requirements, cost or schedule into programs." The DOT&E review examined 40 programs that experienced significant delays during the past few years and found that 7 of those programs experienced some delays due to testing itself. However, none of those programs was delayed solely by problems in testing and in no case was a testing problem a principal cause of delay. In 37 programs, there were delays caused by problems discovered during testing.   Problems found by testing were shown to cause much longer delays than any delay caused by testing itself. Furthermore, a DOT&E review of 76 recent programs found the cost of operational test and evaluation to be only about 1 percent of a program's total acquisition cost, exclusive of test infrastructure costs. We will continue our efforts to make testing both rigorous and efficient.

One area the DAE assessment identified for improvement is the relationship and interaction among the testing, requirements, and program management communities. In that regard, we call your attention to four specific issues that we need your assistance in addressing: the need for closer coordination and cooperation among the requirements, acquisition, and testing communities; the need for well-defined testable requirements; the alignment of acquisition strategies and test plans; and the need to manage the tension between the communities.

First, we need stronger mechanisms for rapid adaptation to emerging facts by the requirements, acquisition, and test communities and less resistance to change. These communities all share the goal of providing our forces in combat with equipment that works as soon as possible; however, they often fail to work together effectively to achieve that goal when change is needed. Leadership at the Service level and throughout each community must empower and require their subordinates to work together to identify and resolve issues

beginning at the earliest stage of requirements development and extending throughout design, development, and testing. Both AT&L and DOT&E will work with the Services to identify and implement whatever policy changes may be needed to promote this empowerment as part of the ongoing revision of the Department's acquisition policies and practices; however, we believe that this is largely a matter of either empowering mid-level leaders to make necessary changes or more frequent senior leader involvement through vehicles like Configuration Steering Boards conducted during a program's development and test phases.

Second, we need the requirements process to produce well-defined, and therefore testable, requirements. Our results indicate the requirements process needs to be more agile and responsive to change as knowledge increases. From the outset, requirements development must be informed by technical feasibility and rigorous trade-off analysis. Defining requirements in ways that are clear and testable, including in a well-defined and comprehensive operational mission environment, should be achieved as early as possible. Operators, developers, program analysts, and testers should all participate in the development of requirements so that they are defined in ways that provide meaningful increments of operational capability, enable efficient program execution, and are testable. Interoperability needs in particular should be clearly defined. Key Performance Parameters should also be limited to those considered critical to assuring mission success in combat.

Third, we have found that acquisition strategies and test plans are often misaligned. A central element of all our acquisition strategies should be an executable plan to use developmental and operational testing together as a means to achieve and demonstrate success. Programs often lack the budgetary and contract flexibility necessary to accommodate discovery and respond to problems discovered during program execution. The acquisition and test communities must work together to assure that this does not occur. Testers must work with developers to develop test plans that are both rigorous and efficient and that account for real-world constraints and expectations.

Fourth, although the independent review found that tensions between programs and the test community are to be expected and healthy for the most part, occasionally the tensions grow to the point of frustration and animosity. These tensions can be mitigated or eliminated through early and objective communication of concerns and issues and with the constructive involvement of senior leaders when necessary.

We are committed to working with you to resolve all of these issues and doing everything we can to efficiently and effectively equip our Warfighters with proven products that will ensure their success. We solicit your input regarding the issues we have identified and any recommendations you may have for improving the performance of our acquisition and test activities.

Our points of contact are Mr. David Ahern, Deputy Assistant Secretary of Defense for Portfolio Systems Acquisition, at 703-693-3614 and Dr. Catherine Warner, Office of the Director for Operational Test and Evaluation, at 703-697-7247.
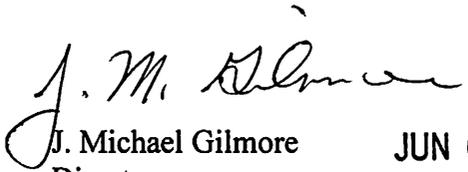
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Director   Under Secretary of Defense
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