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Test and Evaluation:
Transforming to Enable Successful Systems Development and Fielding

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The key to making transformational changes in the test and evaluation process is one program at a time. Army Test and Evaluation Command (ATEC) is looking at itself to further applications of the principles of testing and evaluation discussed in this article. Personnel of the Command are being further trained in these principles to facilitate a closer working relationship with industry, government agencies, and Project Program Managers.

Army Transformation is not just two words on a briefing chart — it is a reality. The U.S. Army has been in the act of a major transformation for several years. Every organization in the Army is changing its processes and procedures to facilitate the transformation process. The Army Test and Evaluation Command (ATEC) is no exception.

Although ATEC has implemented several transformational changes in support of an army at war, there is much more that can be done. It is not change for the sake of change. Every change should, to some degree, save time and/or money, without sacrificing the quality of our mission.

ATEC's mission is simple — assess the performance capabilities of every piece of equipment used in any way by Soldiers. The two basic questions we ask are: Does it work? How do I know?

Our end-state assessments address effectiveness, suitability, and survivability. Based on that assessment, Army leadership decides if Soldiers will ultimately use the item.

Throughout the process of doing our job, we work closely with industry, requirements developers, Program Executive Officers, rapid equipping organizations, and others who are involved in determining the need for or developing materiel solutions to provide capabilities to the Army and other Services. Although usually productive, the relationship between ATEC and the aforementioned groups can improve.

Changing the perception

The major challenge right now in improving our relationship with others is one of perception. We believe most agencies see ATEC as a hindrance, rather than an enabler, in providing equipment to satisfy Soldier needs. Some of the perception challenges are rooted in current policies and regulations. As a general rule, most mandated test events, developmental and operational, are scheduled just before a major milestone decision; and no independent agency test events are required before Milestone A at all. Industry and government materiel developers must work through technology and design growth challenges early in the program, often challenged by schedule compression and funding constraints, leaving no schedule or funding flexibility by the time a mandatory test event occurs. The time and cost due to the test and evaluation (T&E), and performance shortfalls revealed in test, invariably creates the perception that the test agency is an impediment to progress. The challenge — change the perception by involving the T&E throughout the acquisition lifecycle as a proactive part of the process.

ATEC is aggressively reaching out to industry and government agencies, where appropriate, to prove the value of bringing the test community in early in the requirements development, equipment design, and development processes. If brought into the process early and used throughout the acquisition lifecycle as a partner, we are convinced we can aid in building quality into the product from the beginning, saving time and money and minimizing costly redesign when major performance problems go undetected until late in the developmental cycle.

Early and constant involvement in the acquisition process

As we work to earn (and we mean earn) the right to be brought into the acquisition process earlier, ATEC

is also revisiting how we test. The current process is generally linear. Developmental Testing (DT) is separate from, and always prior to, Operational Testing (OT). The evaluation process in many cases begins after testing is complete. Industry or other government agency test data are generally not considered. Early coordination between industry, government materiel developers, and ATEC concerning T&E methods and expectations often fails to occur. These traditional processes are inefficient, archaic, not transformational, and are no longer acceptable. They waste time and money and certainly do not foster team spirit.

Change needs to start from the beginning. ATEC's involvement should start in developmental activities prior to Milestone A. How much involvement will vary according to the nature of the end item. From that point, ATEC's involvement should be constant through every milestone and all aspects of the phases between the milestones. Generally speaking, we believe Project/Product Managers should always have to deliberately decide not to have an ATEC representative in meetings vice the alternative of always having to remember to invite an ATEC representative to a meeting.

Success for ATEC, and the Army, is being recognized as a trusted T&E advisor to the acquisition/developmental team to assist in program cost, schedule, and performance risk management.

The same approach applies to ATEC involvement with the defense industry. The government can include lessons learned from T&E of similar equipment in the advertisement of Requests For Proposals to aid industry proposal responses. Once under contract, dialogue with ATEC can help guide the thought process in contractor testing which, in turn, can influence progressive design changes to enhance system performance. Early, coordinated government/industry test planning can ensure common test procedures, which will allow for potential use of contractor data in government test performance reporting, minimize repetitive testing, and better indicate system readiness for government testing. ATEC involvement in contractor testing also allows for early development of data collection and modeling and simulation tools to support informed development and acquisition decisions throughout the life of the program. Once an item enters government DT/OT, appropriate timely feedback to the prime contractor can be helpful in identifying corrective actions to fix emerging problems, saving everyone time and money.

Internal transformation

Processes internal to ATEC need to change as well. Consistent with the December 22, 2007 Test and Evaluation Policy Revisions memo jointly signed by the USD (AT&L) and the DOT&E, how we do what we do must be less linear and less parochial than in times past. Core T&E principles spelled out in the OSD policy memo include:

1. DT/OT integration throughout program lifecycle
2. Compare to current capabilities
3. Focus – Measure improvements to capability
4. Evaluate in mission context at time of fielding
5. Use all available information
6. Exploit the benefits of M&S

Transformational change internal to ATEC is mandatory to keep pace with the transforming Army. Anything less is a disservice to the Soldiers we ultimately serve. In the end, we are convinced that the quality of our services will increase, saving time and money too.

Is this easy? No.

Is it the right thing to do? Yes.

Will it take time? Yes.

The Army Test and Evaluation Command is committed to this transformational challenge. The process has begun and is picking up steam every day! ❑

Acknowledgment

James Wells, Assistant Technical Director, US Army Test and Evaluation Command, contributed to this article.

MG Roger A. Nadeau took command of the Army Test and Evaluation Command (ATEC) on June 28, 2007. Prior to accepting command of ATEC, he served as the commander of the U.S. Army Research, Development and Engineering Command from October 2004 to June 2007. His other significant assignments include program executive officer for Ground Combat Systems; program executive officer for Combat Support and Combat Service Support; deputy for Systems Acquisition (DSA), Aviation and Missile Command (AMCOM); assistant deputy for Systems Management and Horizontal Technology Integration in the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology; and chief of staff to the Assistant Secretary of the Army (Acquisition, Logistics and Technology)/Army Acquisition executive. For more on ATEC — www.atec.army.mil.