The Contribution of ACTDs to Acquisition Reform

Rapidly Moving New Capabilities From the Developer to the User

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The Advanced Concept Technology Demonstration (ACTD) program was initiated in early 1994 to permit the early and inexpensive evaluation of mature advanced technologies. By providing a means for this evaluation prior to the initiation of formal acquisition, combat-experienced operators are able to assess military utility and develop the tactics and concept of operations to realize the full potential of new and emerging technologies–from both Defense and commercial sources. Certainly, ACTDs are not a means by which to circumvent the formal acquisition process, but rather a means to enter that process based on a user assessment of the utility and value of the new capability. This process is based on user acceptance and is structured to permit more informed acquisition decisions and reduce the time required to transition technology to the warfighter.

As an extremely important precursor to the formal (5000) acquisition process, ACTDs focus on critical military needs, the early and continuous involvement of the warfighter, and the early and inexpensive evaluation of military utility. In a period where the global proliferation of advanced technologies is unprecedented and the generational life of any technological system may be measured in months rather than years, the ACTD approach provides a means of rapidly evaluating and, if warranted, quickly moving new capabilities into operational use. In order to do this effectively, we work closely with the warfighter to ensure a meaningful and credible evaluation of military utility, and with the acquisition community to ensure a smooth and rapid transition.

The ACTD Process

An ACTD is sponsored and executed jointly by a team comprised of an operational user and a technology developer, with approval and oversight from the Deputy Under Secretary of Defense for Advanced Technology (DUSD[AT]). The approval process includes very

Senior leaders attending the recent ACTD Managers Conference conducted at DSMC's main Fort Belvoir campus, 10–11 September, 1996, are pictured with the conference chairman, Michael J. O'Connor, Acting Deputy Director for Technology (Missile, Aviation, Precision Strike), SARDA. Pictured from left: John W. Douglass, Navy Service Acquisition Executive; Paul G. Kaminski, Under Secretary of Defense (Acquisition & Technology); O'Connor; Air Force Gen. Joe Ralston, Vice Chairman, Joint Chiefs of Staff.

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active participation by the Joint Staff, the Joint Requirements Oversight Council (JROC), Unified Commanders, and the Services. The Joint Requirements Oversight Council, chaired by the Vice Chairman of the Joint Chiefs of Staff, and the Unified Commanders actively participate in the ACTD selection process. The selection process starts when a user/developer team identifies a maturing technology that has the potential to address a critical operational need and structures an ACTD candidate for consideration. When the concept is sufficiently defined, a briefing is presented to the DUSD(AT). Technical maturity and potential military effectiveness are the principal considerations. If accepted, the candidate is presented to an advisory group of senior acquisition and operational executives for their review and assessment and is made available to the Joint Staff, through the Joint Warfare Capabilities Assessment and the Joint Requirements Oversight Council.

The sponsoring user is responsible for providing the operational forces and defining the mission and scenario, concept of operations, and the measures of effectiveness that will be used in completing the post-demonstration assessment. The development agent provides day-to-day fiscal and programmatic management. Typically, the major source of funding for an ACTD is the executing agency, which is responsible for the mature technology that will be evaluated in the demonstration. Supplemental funds may be provided by the DUSD(AT) for integration activities, additional quantities of the new technology required for a realistic field assessment, and post-demonstration support for continued user evaluation and contingency operations.

Photos by Richard Mattox

Evaluating Military Worth

Each ACTD is intended to meet one or more warfighting needs. In addition, ACTDs allow the warfighting user to evaluate and make recommendations on the military utility of advanced technologies in satisfying such needs before a decision is made to proceed with a formal development or acquisition effort. If successful, an ACTD may be left behind to provide near-term operational capability and the means to further develop training and operational concepts.

Further, ACTDs allow the examination of new, mature technologies and their applicability to emerging missions in a setting which permits us to not only assess the military utility but also allows for the development of operational doctrine and tactics to optimize the effectiveness of the new capability. Through the ACTDs, DoD is establishing a process to capitalize on the technological innovation which is so critical to ensuring that U.S. forces retain their military superiority.

Existing and Planned ACTDs

Ten ACTDs were identified and initiated in FY 1995, and 12 were initiated in FY 1996. The FY 1996 ACTDs are in various stages of planning and execution, and candidates for FY 1997 are currently being reviewed. Each of these is based on integrating and focusing existing technology programs and/or Advanced Technology Demonstrations (ATD) on a specific, critical military need. The FY 1995 ACTDs address the following 10 initiatives:

- improving the effectiveness of Light Ground Forces;
- providing Precision Targeting Data derived from Signals Intelligence;
- effective counter-fire to Multiple Rocket Launchers;
- a Simulation Capability for Joint Combat Training and Rehearsal;
- High Altitude Long Endurance Unmanned Aerial Vehicles;
- Medium Altitude Long Endurance Unmanned Aerial Vehicles;
- Joint Counter-mine Warfare;

- Cruise Missile Defense;
- Advanced Joint Warfare Planning Capability; and
- Kinetic Energy Boost Phase Intercept Concept.

Of these 10 initiatives, the Cruise Missile Defense (CMD) and Kinetic Energy Boost Phase Intercept (KE-BPI) ACTDs have been successfully completed. The CMD integrated technologies demonstrated an over-the-horizon intercept capability against simulated low altitude land-attack cruise missiles using Navy and Army defensive missiles. The next phase of this ACTD is being considered for initiation in FY 1997. In the KE-BPI ACTD, the concept was determined to be technically achievable but unaffordable; this effort was terminated.

One of the most publicized of the FY 1995 ACTDs is the Predator medium altitude Unmanned Aerial Vehicle (UAV). Predator progressed from a concept to an operational capability in a period of less than 18 months by integrating mature technology developed under several other programs. Each system consists of three air vehicles, a very capable suite of Electro-optical/Infrared/Synthetic Aperture Radar sensors, the appropriate ground control station, and communications support. The first flight occurred in July 1994, and Predator was deployed to the Bosnia theater in July 1995. On March 1 of this year, Predator again was deployed to European Command to support Operation Joint Endeavor. The ACTD is nearing completion, and the process of transitioning to a formal acquisition program has begun. The success of this ACTD enables entrance into the formal acquisition process with a much better understanding of the Predator capabilities (and limitations), a tried and proven set of Concept of Operations, and an assessment from the user community that Predator satisfies a critical military need.

The FY 1996 ACTDs include: airbase/port biological agent detection, counter-proliferation, combat identification, joint readiness enhancements to the Advanced Joint Planning ACTD, semi-automatic processing of imagery, battlefield awareness and data dissemination systems, navigation warfare, land vehicle survivability, joint logistics, and miniature air launched decoys.

Several panels convened during the ACTD Managers Conference. Among them was Discussion Panel 3, which focused on the topic of "Planning the Demonstration." Seated from left: Navy Lt. Cmdr. William M. LaPrise, USACOM J32T (Joint Countermine ACTD Operations Manager); Richard S. Cozby, USATECOM (Test & Evaluation Community); Army Lt. Col. John Arthur, USACOM J32 (Combat ID ACTD Operations); Dr. Gerardo Melendez, PM Combat ID (Combat ID Demonstration Manager). Standing from left: Graham Law, ADUSD(AT) (Technical Systems Integration) (OSD Representation); Squadron Leader Martin J. Ball, RAAF (Navigation Warfare ACTD Demonstration Manager); Alan Winkenhofer, USAARMC (Combat Vehicle Survivability ACTD Operations Manager); Navy Lt. Cmdr. Bruce Urbon, Office of Naval Research (Precision SIGINT Targeting ACTD Demonstration Manager).

In addition to these, there were three other ACTDs that were initiated in FY 1996. Tactical UAV was initiated in response to direction from the JROC; Counter Sniper to capitalize on emerging technologies that had potential against this threat; and Tactical High Energy Laser, a joint effort with the Israeli Ministry of Defense to provide a means to counter the Katyasha rocket threat.

The FY 1997 ACTD candidates range from a capability to monitor the condition of critical helicopter components (to provide on-board indications of potential failure and to permit condition-based maintenance) to evaluating technologies relevant to military operations in urban terrain. The Under Secretary of Defense (Acquisition & Technology) has basically accepted the JROC prioritization of 18 ACTD candidates for initiation in FY 1997. Activity is currently focused on refining ACTD details and working with the Joint Staff to determine which efforts will be impacted by any reductions in the FY 1997 budget request.

The DoD is committed to maintaining a legacy of military superiority at an affordable cost, a goal that is considered achievable through acquisition reform initiatives such as the ACTD. As an affordable means of rapidly moving new capabilities from the developer to the user, the ACTD process contributes significantly to this goal.