OFFICE OF THE SECRETARY OF DEFENSE
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OPERATIONAL TEST
AND EVALUATION

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
ATTENTION: SERVICE ACQUISITION EXECUTIVES
ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL, COMMUNICATIONS & INTELLIGENCE)
DIRECTOR, DEFENSE INFORMATION SYSTEMS AGENCY
DIRECTOR, DEFENSE LOGISTICS AGENCY
DIRECTOR FOR FORCE STRUCTURE, RESOURCES & ASSESSMENT, JOINT STAFF (J-8)
DIRECTOR, TEST AND EVALUATION, OUSD(A&T)
DEPUTY UNDER SECRETARY OF THE ARMY (OPERATIONS RESEARCH)
DIRECTOR, NAVY TEST & EVALUATION & TECHNOLOGY REQUIREMENTS
DIRECTOR, AIR FORCE TEST & EVALUATION

SUBJECT: Software Maturity Criteria for Dedicated Operational Test and Evaluation of Software-Intensive Systems

Reference: GAO/NSIAD-93-198, "Test and Evaluation: DoD Has Been Slow in Improving Testing of Software-Intensive Systems," dated September 29, 1993

As a part of the Department's initiative to address the General Accounting Office's (GAO) recommendations on the Department's test and evaluation policy of software-intensive systems, I am issuing the following guidance to establish the software maturity criteria for the dedicated OT&E (in support of full rate production decisions or deployment decisions) of software-intensive systems. It is my intent to include this guidance in the revisions to the DoD 5000 and 8120 policy documents.

To improve the success rate of OT&E for software-intensive systems, and to prevent immature software-intensive systems from entering OT&E, software maturity must be demonstrated prior to the start of the dedicated OT&E. The following conditions must be satisfied and the results presented at the operational test readiness review that precedes the OT&E:

a. The system must not possess any known Priority I or II problems (as defined by the DoD-STD-2167A) that impact the OT&E so as to constitute a deficiency relative to a critical operational issue. Priority III problems must be documented with appropriate impact analyses completed. These impact analyses must focus on the problems' potential impact to the system's mission capability and the ability to resolve the affected critical operational issues. After the problems and their associated

impact analyses are reviewed by the functional proponent, operational test agency, and other participating organizations, recommendations on whether to proceed, delay, or cancel the OT&E can be made to the designated Service or Agency operational test certification official.

b. System functionality to be operationally tested and evaluated must be available prior to the start of OT&E and must have been developmentally tested. In particular, the system features that are required to support specific requirements and the system interfaces that are required to inter-operate with external systems must be certified to be functional, preferably in an operationally realistic environment (real users, data, procedures, etc.) against operational requirements.

c. The program management office in conjunction with the Service's or Agency's independent evaluator must identify all the unmet critical technical parameters and open deficiencies that have been noted during the developmental test and evaluation. During certification of readiness for dedicated OT&E, the acquisition executive must certify and the operational test agency must agree that the software requirements and design are stable, that software and interface testing of sufficient depth and breadth has been performed, and that required functionality has been successfully demonstrated at the system level in developmental testing. Impact analyses, on the shortfalls' potential impact to the system's mission capability and the ability to resolve the affected critical operational issues, must be completed.

d. A deficiency identification, tracking, and reporting system must be in place to support the monitoring of deficiency reports by the operational test agency. Further, a software configuration management system with the associated control procedures must be in place prior to the start of OT&E. Software-intensive systems to be operationally tested must be baselined in the configuration management system. During the operational test phase, the operational test agency must have complete access to the configuration management system.

e. Software or firmware changes, if any, must be completed prior to the start of OT&E and must not be implemented during the OT&E unless specifically acknowledged and concurred by the responsible operational test agency. The expected impact of these changes on the OT&E data stream and the evaluation of the critical operational issues must be addressed by the responsible operational test agency to assist in the decision to allow the change(s) during OT&E.

for Director