ACQUISITION,
TECHNOLOGY
AND LOGISTICS

THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
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MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
INSPECTOR GENERAL, DEPARTMENT OF DEFENSE
GENERAL COUNSEL, DEPARTMENT OF DEFENSE
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: Evolutionary Acquisition and Spiral Development

Since the publication of DoD Directive 5000.1 and DoD Instruction 5000.2, in which the Department established a preference for the use of evolutionary acquisition strategies relying on a spiral development process, there has been some confusion about what these terms mean and how spiral development impacts various processes such as contracting and requirements generation that interface with an evolutionary acquisition strategy. The purpose of this memorandum is to address those questions.

Evolutionary acquisition and spiral development are methods that will allow us to reduce our cycle time and speed the delivery of advanced capability to our warfighters. These approaches are designed to develop and field demonstrated technologies for both hardware and software in manageable pieces. Evolutionary acquisition and spiral development also allow insertion of new technologies and capabilities over time. Therefore, these approaches provide the best means of getting advanced technologies to the warfighter quickly while providing for follow-on improvements in capability. Evolutionary acquisition and spiral development are similar to pre-planned product improvement but are focused on providing the warfighter with an initial capability which may be less than the full requirement as a trade-off for earlier delivery, agility, affordability, and risk reduction.

Attached is a set of definitions. My points of contact for further information are Skip Hawthorne in the Acquisition Initiatives office, 703-697-6399, skip.hawthorne@osd.mil, or Ramona Lush in the Acquisition Resources and Analysis office, 703-695-5166, ramona.lush@osd.mil.

E.C. Aldridge, Jr.

Attachment
As stated

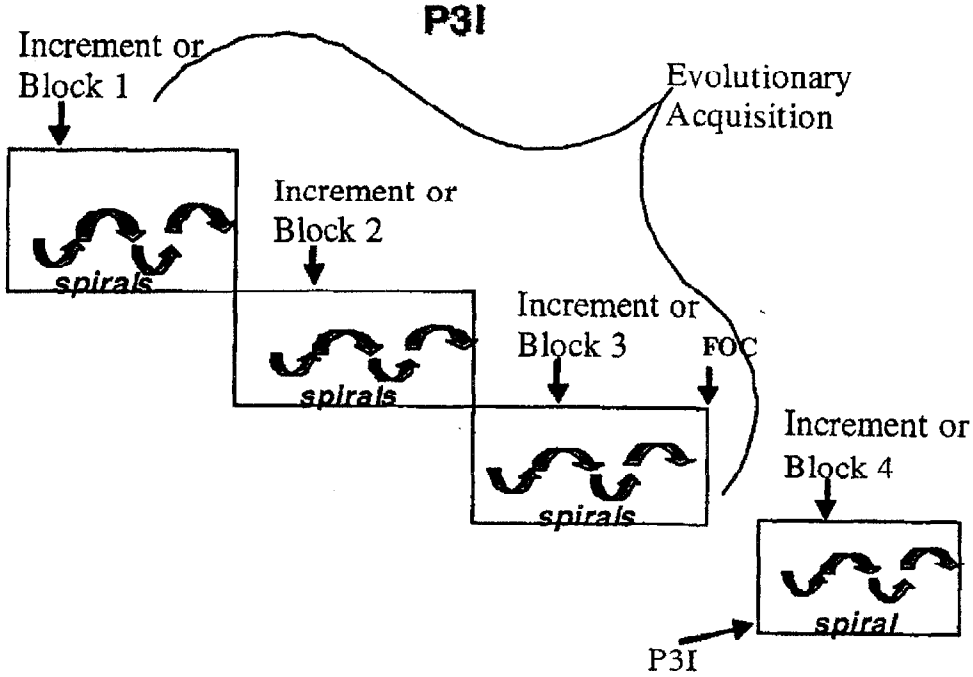
DEFINITIONS

Evolutionary Acquisition. An acquisition strategy that defines, develops, produces or acquires, and fields an initial hardware or software increment (or block) of operational capability. It is based on technologies demonstrated in relevant environments, time-phased requirements, and demonstrated manufacturing or software deployment capabilities. These capabilities can be provided in a shorter period of time, followed by subsequent increments of capability over time that accommodate improved technology and allowing for full and adaptable systems over time. Each increment will meet a militarily useful capability specified by the user (i.e., at least the thresholds set by the user for that increment); however, the first increment may represent only 60% to 80% of the desired final capability.

There are two basic approaches to evolutionary acquisition. In one approach the ultimate functionality can be defined at the beginning of the program, with the content of each deployable increment determined by the maturation of key technologies. In the second approach the ultimate functionality cannot be defined at the beginning of the program, and each increment of capability is defined by the maturation of the technologies matched with the evolving needs of the user.

Spiral Development. An iterative process for developing a defined set of capabilities within one increment. This process provides the opportunity for interaction between the user, tester, and developer. In this process, the requirements are refined through experimentation and risk management, there is continuous feedback, and the user is provided the best possible capability within the increment. Each increment may include a number of spirals. Spiral development implements evolutionary acquisition.

Increment or Block. A militarily useful and supportable operational capability that can be effectively developed, produced or acquired, deployed, and sustained. Each increment of capability will have its own set of thresholds and objectives set by the user.

Pre-Planned Product Improvement (P3I). A traditional acquisition strategy that provides for adding improved capability to a mature system.

Evolutionary Acquisition, Spiral Development, & P3I