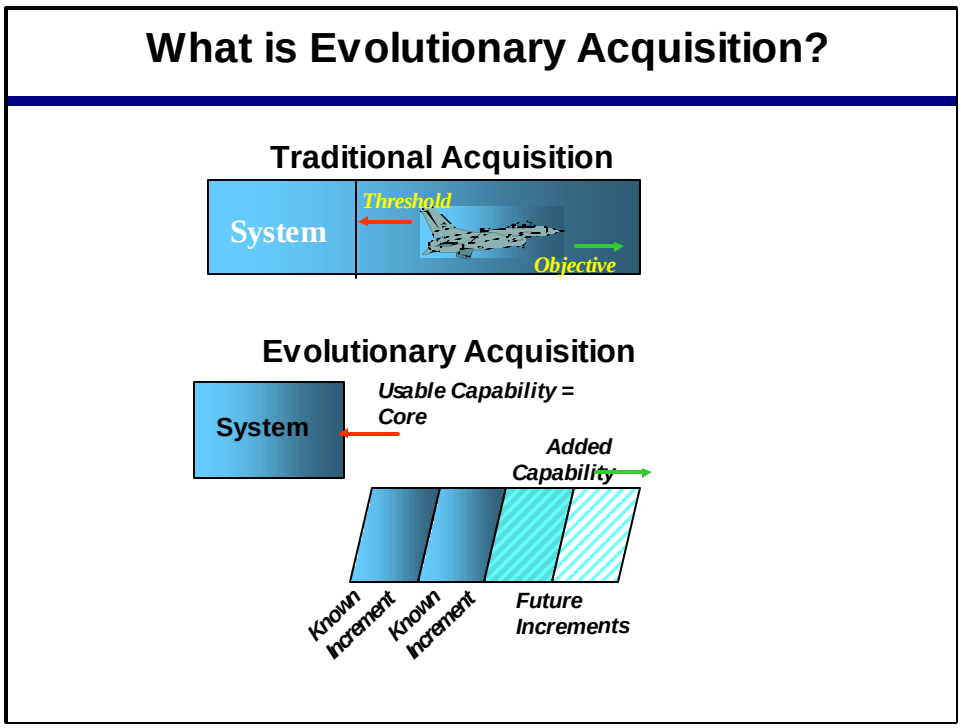
Joint Evolutionary Acquisition Learning Module

Introduction to Evolutionary Acquisition

Policy Bullets



Mr. Pete Aldridge, USD AT&L explaining EA!

An Evolutionary Acquisition Strategy is the preferred approach to development and fielding defense systems. An evolutionary acquisition strategy defines, develops, produces and deploys an initial, militarily useful capability, and plans for subsequent development, production and deployment of increments beyond the initial capability over time.

The scope, performance capabilities, and timing of subsequent increments will vary on a case by case basis.

By its nature, evolutionary acquisition is an incremental process that defines increments of capability and what is necessary to develop and deploy them.

Introduction to Evolutionary Acquisition

- **Benefits of EA to DoD**
- **Summarize DOD Policy on EA**
- **Evolution of policy**
- **The terminology of EA - Standard Definitions and what they really mean**
- **Compare Traditional vs EA approaches**

MR. Aldridge speaking:

We offer this awareness module to help you better understand:

The Benefits of an Evolutionary Acquisition Strategy to the Dept. of Defense,

You will be able to summarize DOD Policy on Evolutionary Acquisition and be familiar with how it evolved.

We will also cover terminology associated with Evolutionary Acquisition and provide some standard definitions and what they really mean! Finally, we will

compare the traditional acquisition strategy with Evolutionary Acquisition approaches.

Why do we do Evolutionary Acquisition?

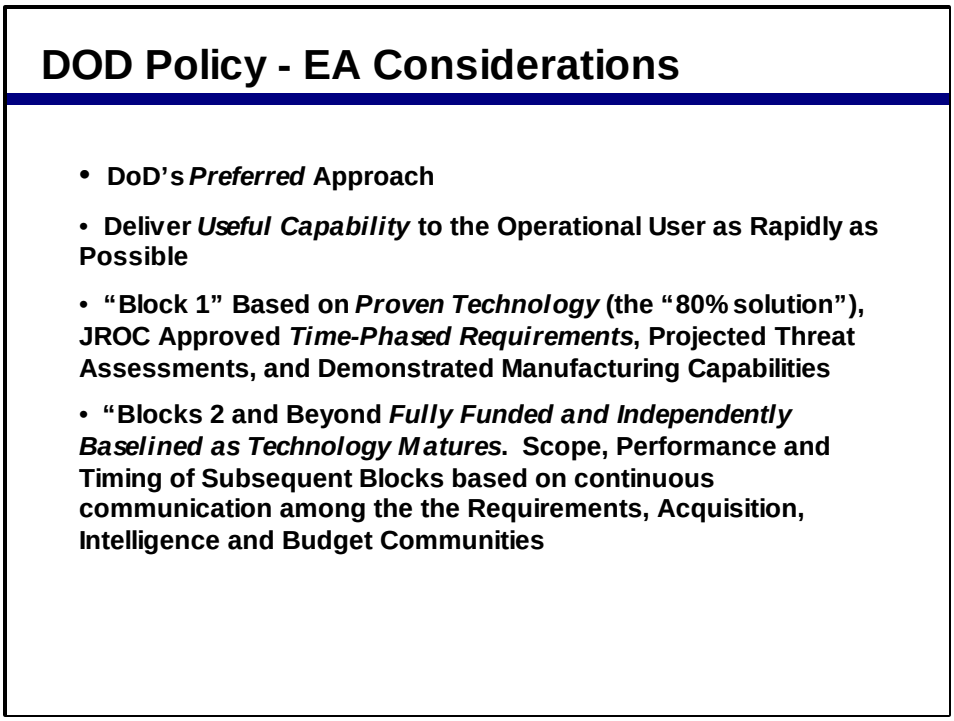
Faster Delivery of Advanced Technology to the warfighter

Bottom Line is that EA enables Faster Delivery of Advanced Technology to warfighter

From an acquisition perspective, it does more than enable us to field systems earlier as Initial capability evolves in planned blocks or increments.

- It establishes architecture amenable to absorbing new technology
- Enhances flexibility of future growth
- Improves management of technical risk and a better understanding of cost and schedule as well
- From an industry perspective, it maintains R&D staff and Reduces impact of diminished manufacturing sources

Again, Faster Delivery of Advanced Technology to warfighter



Evolutionary Acquisition Strategy Considerations

The acquisition strategy shall define not only the approach to be followed in System Development and Demonstration, but also how the program is structured to achieve full capability. There are two such approaches, evolutionary and single step to full capability. An evolutionary approach is preferred. Evolutionary acquisition is an approach that fields an operationally useful and supportable capability in as short a time as possible. This approach is particularly useful if software is a key component of the system, and the software is required for the system to achieve its intended mission. Evolutionary acquisition delivers an initial capability with the explicit intent of delivering improved or updated capability in the future.

The approach to be followed depends on the availability of time-phased requirements in the ORD, the maturity of technologies, the relative costs and benefits of executing the program in blocks versus a single step, including consideration of how best to support each block when fielded (e.g., whether to retrofit earlier blocks, the cost of multiple configurations, how best to conduct new equipment training, etc.). The rationale for choosing a single step to full capability, when given an ORD with time-phased requirements, shall be addressed in the acquisition strategy. Similarly, the rationale for choosing an evolutionary approach, when given an ORD with no time-phased requirements, shall be addressed in the acquisition strategy. For both the evolutionary and single-step approaches, software development and integration shall follow an iterative spiral development process in which continually expanding software versions are based

DOD Policy: Two EA Approaches

- **ORD includes a Firm Definition of Full Capability as well as a *firm definition of Requirements to be satisfied by Each Block*: Acquisition Strategy describes how each Block will be Baselined, Funded, Tested, Produced and Supported**

- **ORD includes a *Firm Definition of the First Block but Does Not allocate to subsequent Blocks the remaining Requirements:* Subsequent requirements based on User' s increased understanding of Threat, Available Technology**
  - **MDA authorizes work to begin on subsequent Blocks in consideration of above as well as Full Funding, Test and Sustainment Strategy, etc.**

The ORD includes a firm definition of full capability, as well as a firm definition of requirements to be satisfied by each block, including an IOC date for each block. In this case, each block shall be baselined and the acquisition strategy shall define each block of capability and how it will be funded, developed, tested, produced, and operationally supported.

The ORD includes a firm definition of the first block, but does not allocate to specific subsequent blocks the remaining requirements that must be met to achieve full capability. In an evolutionary acquisition, the specific requirements for Block 2 are defined in the ORD, based on the user's increased understanding of the delivered capability, the evolving threat, and available technology, lead-time-away from beginning work on Block 2, and so on, until full capability is achieved. Requirements that cannot be fulfilled during a specific block development, with the approval of the requirements authority, may be delayed to the next block development. The first block, and each subsequent block, is baselined in conjunction with the MDA authorizing work to proceed on that block. The acquisition strategy shall define the first block, of capability, and how it will be funded, developed, tested, produced, and supported; the full capability the evolutionary acquisition is intended to satisfy, and the funding and schedule planned to achieve the full capability to the extent it can be described; and the management approach to be used to define the requirements for each subsequent block and the acquisition strategy applicable to each block, including whether end items delivered under earlier blocks will be retrofitted with later block improvements.

In a single step to full capability approach, the full system capability is developed and demonstrated prior to Milestone C. Under this approach, any

Evolutionary Acquisition History

- 1983 -- AFCEA Study of EA for C2 Programs
- 1986 -- Joint Logistics Commanders Endorse EA
  and request DSMC produce EA Guide
- 1987 -- EA Guide Published for C2 Programs
- Initiated in 1993
  - Joint Logistics Commanders' (JLC) publication
  - Primary applications in C4I community
- Updated in 1995
  - Alternate acquisition strategy in DoDD 5000.1
- 1995 -- NCAT proposes Evolutionary Development
  Model for Weapon Systems
- 1996 -- Defense Acquisition Deskbook includes
  "non-traditional" acquisition model
- Prescribed in 2001
  - Preferred strategy in Jan 2001 update to DoDI 5000.2
- DoD 5000.2-R, 10 June 2001
  - Requirement for Time-Phased ORDs
- Chairman of the Joint Chiefs of Staff Instruction CJCSI3170.01B, April

Terminology

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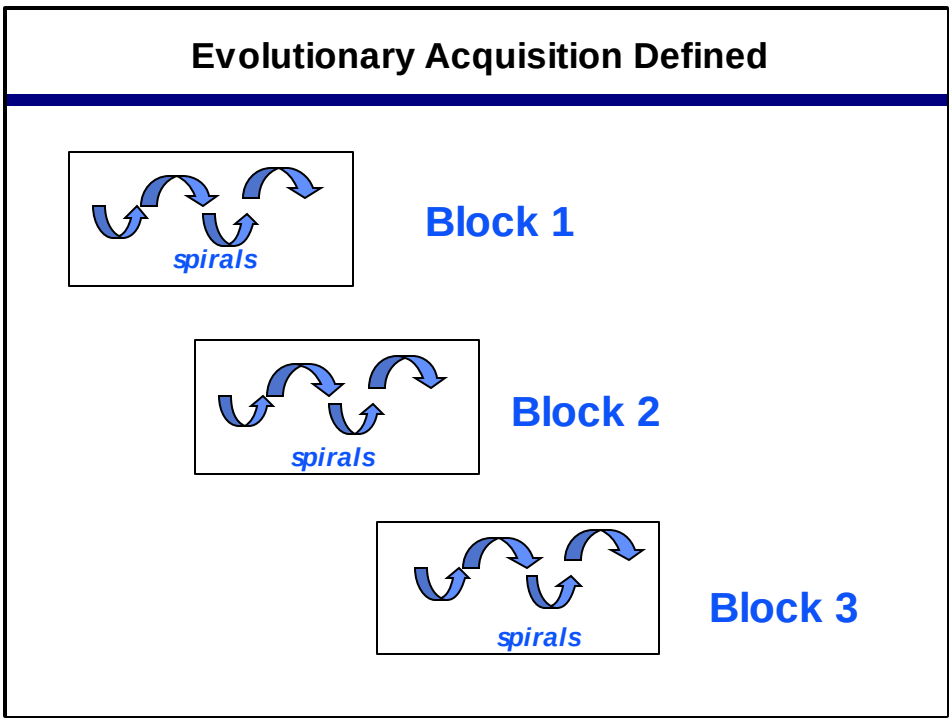

An evolutionary acquisition strategy defines, develops, produces and deploys a initial, militarily useful capability ("Block I"), and plans for subsequent development and production/deployment of increments beyond the initial capability over time (Blocks II, III, and beyond). The scope, performance capabilities, and timing of subsequent increments will vary case by case. (DoDD 5000.1, 4.3.1.)

By its nature, evolutionary acquisition is an incremental process: define increments of capability and do what is necessary to develop and deploy them. Each Block of capability represents a sufficient stride forward to warrant attention by the Milestone Decision Authority in the acquisition systems management decision making process.

Traditional Upgrade Approaches

- ***Mods.*** **The Operational Requirements Document includes a *firm definition of full capability for the first block*. Additional capability is added subsequently once it is defined as a result of *new missions*, *new technologies*, etc.**
  - **Example: F-16**

- ***Pre-planned product improvement (P3I).*** **The Operational Requirements Documents includes a firm definition of *full capability that the system meets*. Additional blocks of capability are planned that provide capability *over and above* the Operational Requirement Document.**
  - **Example: M1 Tank**

Evolutionary Acquisition

OR ***Single Step to Full Capability ?***

Key Considerations

- **Urgency of Requirement**
- **Maturity of Key Technologies**
- **Interoperability, Supportability, and Affordability of Alternative Acquisition Approaches**
  - **Cost/Benefit of Evolutionary vs. Single Step Approach**

Evolutionary Approach

Key Enablers

- Time-Phased Requirements
- A Modular Open Systems Approach to facilitate Technology Insertion
- Evolutionary Sustainment Strategies
- T&E Consistent with Evolutionary Approach
- Full Funding