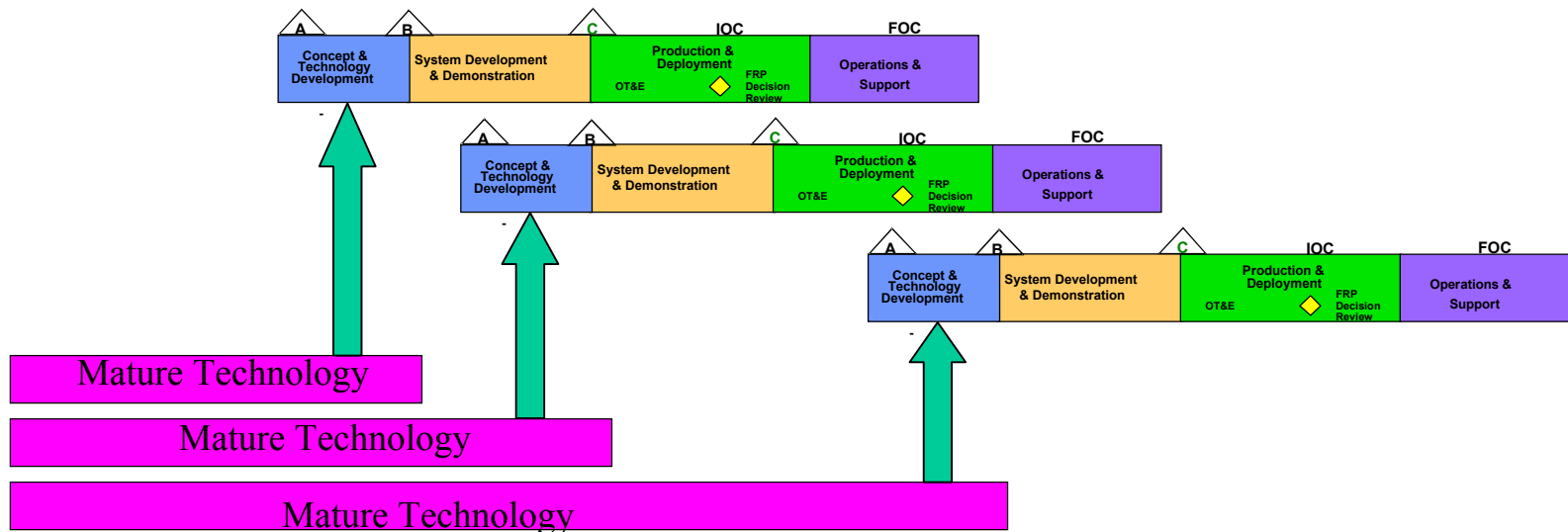
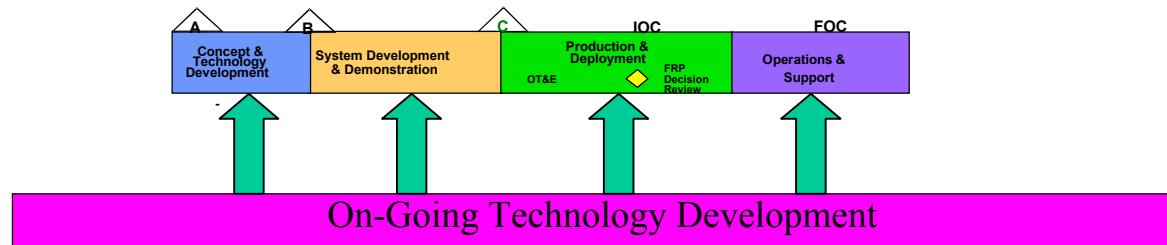


**Joint Evolutionary Acquisition**  
**Learning Module**  
**Introduction to Evolutionary Acquisition**

**Technology Subgroup**

# Context

## Current Procedures and Organization



**Fielding Today's Mature Technology—Today!**  
**Not Yesterday's Immature Technology—Tomorrow!**

# Context

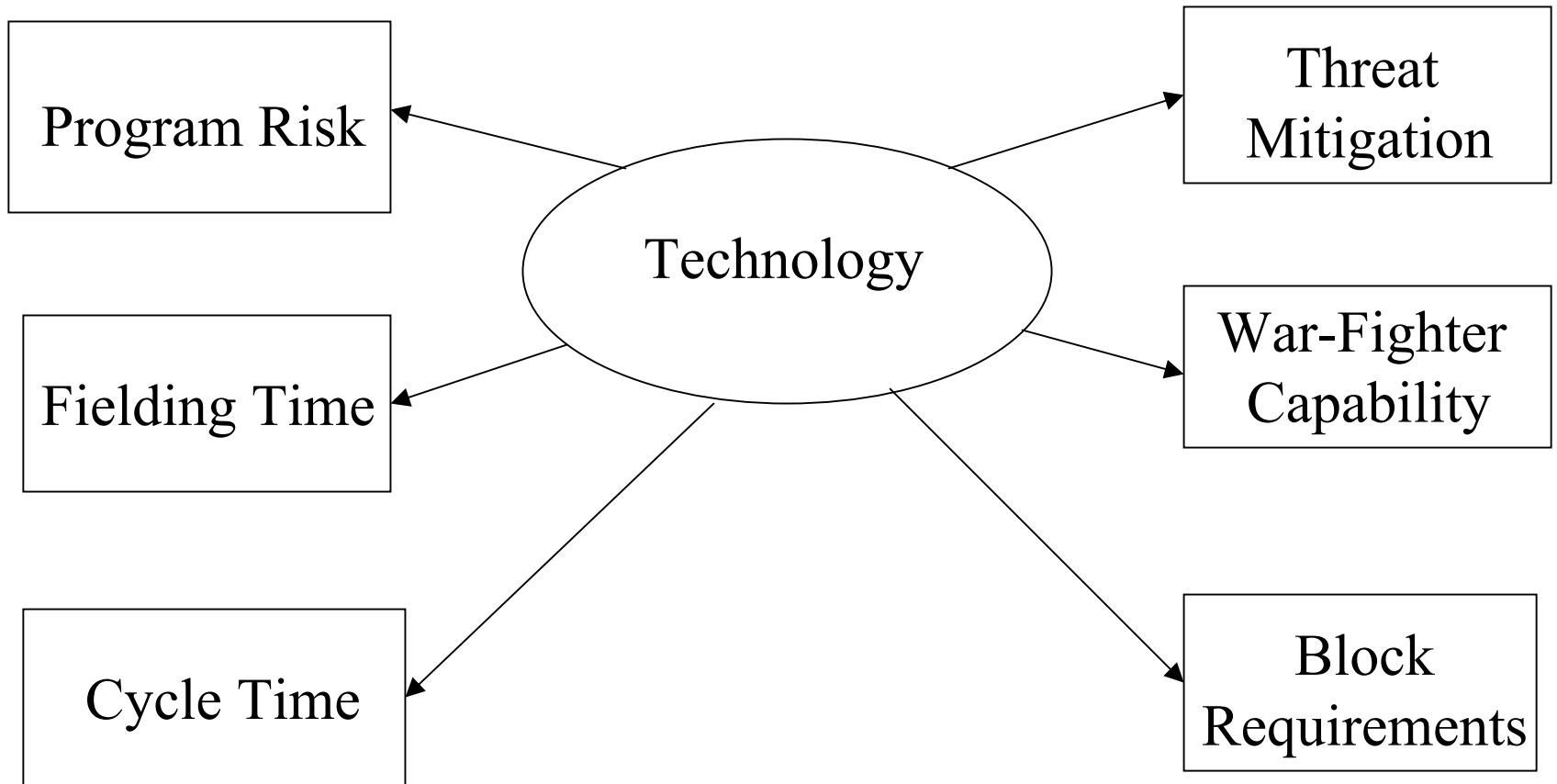
## Current Procedures and Organization

- **Average Program Cycle Time Is Approximately 8 Years (1997) for All Services (Ref. DSB Briefing, Dan Czelusniak, 12 June 1998).**
- **This implies difficulty in keeping pace with accelerating technology cycles, introducing innovation and adapting/driving doctrinal changes.**
- **Quoting E.C.Aldrich (12 April 2002), Under Secretary of Defense for Acquisition, Technology and Logistics:**

**“Evolutionary acquisition...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 ... allows insertion of new technologies and capabilities over time. Therefore, [this approach] provides the best means of getting advanced technologies to the warfighter quickly while providing for follow-on improvements in capability. Evolutionary acquisition ... [is] similar to pre-planned product improvement but [is] 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.”**

# Context

## Technology Linkages



# Context

## Technology Selection Criteria

- Maturity
- Availability
- Growth Potential
- Obsolescence
- Applicability (System Performance and Program Cost and Schedule)
- Utility
- Sustainability
- Trainability

# **The Institutional Challenge in Accepting the Role of Technology in Evolutionary Acquisition**

**Changing the Executive,  
Legislative and Industrial  
Acquisition Culture**

# **Challenges to Technology Insertion US Government**

- **Funding Mature Technologies Adequately**
- **Applying EA Processes Consistently by DOD PMs**
- **Locating Sources of Appropriate Technologies**
- **Maintaining a Viable Industrial Base**
- **Determining Suitable Metrics and Processes for Technology Selection**
- **Retaining Immature yet Promising Technologies**
- **Eliminating Biases in Determining Technology Maturity**

# **Challenges to Technology Insertion US Industry**

- **Developing Investment Strategies to Deal with Uncertainty in Block Technology Requirements and Production Quantities**
- **Adapting to Competition with Government Laboratories for Small Production Quantities**
- **Eliminating Biases in Determining Technology Maturity**
- **Understanding US Government Requirements for Future Blocks**
- **Accepting New vs. Incumbent Technologies by both Government and Industrial Decision Makers**
- **Funding of Technologies to Move to Adequate Insertion Levels**
- **Protecting Intellectual Property Rights**

# **Tools and Processes for Assessing Technology**

- **ATD/ACTD—Determining Operational Effectiveness, Capability and Suitability by the Warfighter**
- **Technology Readiness Levels (DOD 5000.2R)**
- **Determining Sources and Availability of Potentially Useful Technologies (e.g. Lead System Integrator)**
- **Open Discussions among Acquisition, Operational and Requirements Communities and Technology Developers**
- **Acquisition Documents:**
  - Time Phased Operational Requirements Document (ORD)**
  - Capstone Requirements Document (CRD)**
  - Mission Needs Statement (MNS)**
  - Mission Area Analysis (MAA)**
  - Systems Threat Assessment Report (STAR)**
  - Analysis of Alternatives (AOA)**

# **EA Attributes**

**Using Mature Technologies to Reduce Both  
Program Risk and Fielding Time to Deliver a  
Useful Capability to the Warfighter**

# Examples and Case Studies

- **Ballistic Missile Defense---Missile Defense Agency  
Capability Driven Requirements and Block Definition**
- **Science and Technology---OUSD (AT&L)  
National Aerospace Initiative (Hypersonics)**
- **DDX---US Navy OPNAV  
Restructured Program for Next Generation Destroyer**
- **Future Combat Systems---US Army and LSI  
Army Transformation for the Objective Force**
- **Small Diameter Bomb---US Air Force  
Phased Acquisition Approach**

# Reference Materials

- **Hon. E.C. Aldrich Memo on Evolutionary Acquisition and Spiral Development (12 April 2002)**
- **DOD Acquisition Directive, Instruction and Regulation (5000 Series)**
- **Nunn-McCurdy Act for Acquisition Breaches**
- **AF Evolutionary Acquisition Guide**
- **Joint Logistics Commanders' Conference Report**
- **Evolutionary Acquisition Community of Practice (Web-based)**