



# Process Changes For COTS Based Systems

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These are points for discussion purposes and  
do not necessarily reflect DoD positions



# DoD & COTS - Traditional

- **Fixed Requirements, Fixed Architecture**
  - Acquirers/overseers
    - Strategy for Faster, Better, Cheaper
    - Contract for Firm Fixed Requirements
    - Enforce Vague Interoperability Standards
    - Plan for Engineering Change Proposals
  - Integrators
    - Deal with Unique, Poorly Defined Interfaces and Architectures
      - No Interface or Component Standards
  - Users
    - Accept Only After All Requirements Met
      - Full Security, Training and Documentation
      - No User Tailorability
  - Maintainers
    - Keep COTS Changes at Minimum, Portable
  - COTS Vendors – Potential For
    - Create Unique DoD/Program Baseline
    - Proprietary Architecture and Non-Standard Interfaces
    - Profits in Sustainment



# DoD & COTS - Evolutionary

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- **Flexible Requirements, Flexible Architecture**
- **Partnership with All Stakeholders Required**
  
- **Acquirers/overseers**
  - Accept Evolving Requirements, Cost, & Schedule
    - No Full Up-front Plan
  - Manage User Expectations Continuously
  - Incentivize Contractor to account for evolution
    - Build 'Ilities' Into Architecture at Beginning
    - Plan for Technology Refresh
  - Structure Program Documentation for Multiple Deliveries
    - Especially Requirements, Test, and Training
  - Keep Cost and Schedule Management Reserve for Unexpected



# DoD & COTS – Evolutionary (2)

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- **Flexible Requirements, Flexible Architecture**
- **Partnership with All Stakeholders Required**
- **Integrator**
  - Understand and Influence Interface Stakeholders
    - Interfaces (Organizations or Systems) Can Drive COTS Software Upgrades, Replacements or Additions
  - Enforce Well Defined, Flexible, Commercial or Standard Interfaces
    - Evolve to Access New Technologies and Services
  - Experienced With COTS
  - Perform Prototyping in System Context



# DoD & COTS – Evolutionary (3)

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- Flexible Requirements, Flexible Architecture
- Partnership with All Stakeholders Required
  
- Users
  - Lead Formalized Delivery Definition Process
    - Trade Cost, Schedule, Performance, Operations and Maintenance Concepts
  - Be Flexible When Capabilities Delivered
    - Priorities vs System Impacts
    - Allow Lots of Transition Issues/workarounds
  - Need Contractor Support/Involvement
  - Require User Tailorability

# DoD & COTS – Evolutionary (4)

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- Flexible Requirements, Flexible Architecture
- Partnership with All Stakeholders Required
  
- Maintainers
  - Implement Mature Development Processes for Ongoing Upgrades
  - Perform Periodic Evaluation of COTS Software Products Using Robust Evaluation Criteria
    - Product and Service Costs Are Market Driven
    - Vendors' Strategies and Market Position May Change
    - Product Release Quality, Content and Schedules Are Subject to Change



# DoD & COTS – Evolutionary (5)

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- **Flexible Requirements, Flexible Architecture**
- **Partnership with All Stakeholders Required**
- **COTS Vendors –**
  - Large or Small COTS => Very Different Processes
  - Open Up Proprietary Architecture
  - Define Published or Standard API
  - Partner with DoD Customer Through User Groups, Change Control Boards, etc.
    - Inform DoD Customers

# Summary

## Evolutionary Acquisition

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- Need Plan/Processes for CBS more than ever
  - Flexible requirements process
    - Partnership among the customer, developer/sustainer & user
    - Trade cost, schedule, performance and O&M concepts.
  - Modifiable, extensible architecture
    - Must support COTS software evolution/replacement
    - Definition through Evolution
    - Flexible Standard Interfaces