Manufacturing Implications within new DODI 5000.02 (Dec 8, 2008)

Summary for Industry

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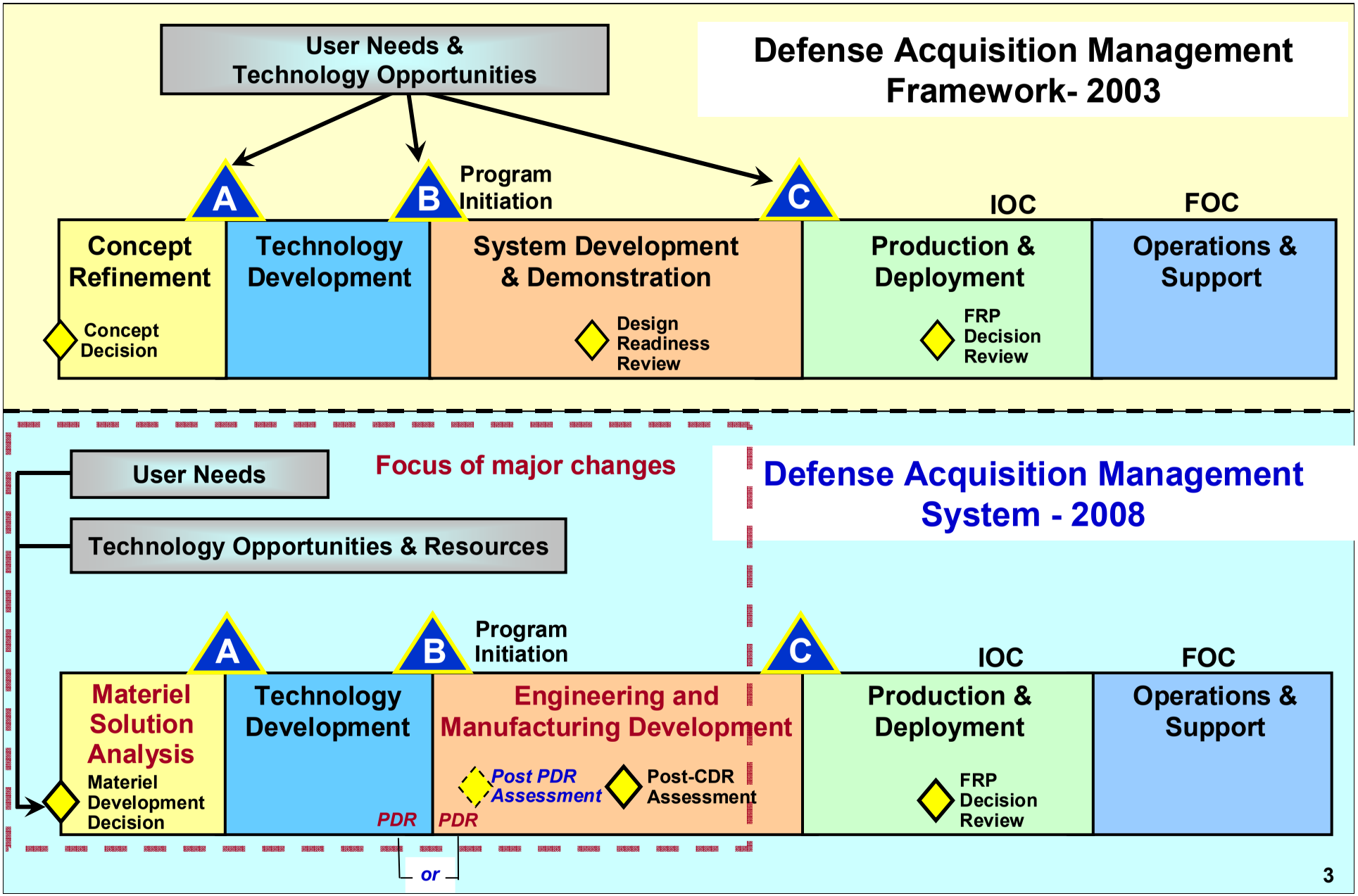
Overview

- DoDI 5000.02 represents an instruction for the operation of the Defense Acquisition System, essentially providing details for HOW Program Managers are required to implement the DoD Directive 5000.01.
- DoDI 5000.02 covers all Military Services and Components, and applies to all Defense Technology Projects and Acquisition Programs.
- The December 8, 2008 version of the DoDI 5000.02 modifies the Defense Acquisition Framework to emphasize the importance of technology and manufacturing maturity early in the acquisition process, including the AoA (Milestone A) and PDR (Milestone B) reviews.
- The framework now requires the assessment of manufacturing readiness as an exit criteria for three of the acquisition phases.
- The core system acquisition phase has been changed to Engineering and Manufacturing Development [EMD] from System Development and Demonstration [SDD]

Defense Acquisition Framework: Comparison of 2003 vs. 2008



Manufacturing in DoDI 5000.02 [Pre MS-B]

- Material Solution Analysis Phase (MS-A)
  - The AoA shall assess:
    - "manufacturing feasibility" (MRL 4)
- Technology Development Phase
  - Prototype systems or appropriate component-level prototyping shall be employed to:
    - "evaluate manufacturing processes"
  - A successful PDR will:
    - "identify remaining design, integration, and manufacturing risks"
  - Program will exit the Technology Development Phase when:
    - "the technology and manufacturing processes for that program or increment have been assessed and demonstrated in a relevant environment" (MRL6)
    - "manufacturing risks have been identified"

Manufacturing in DoDI 5000.02
[EMD]

- Engineering and **Manufacturing** Development Phase
  - overarching purposes include:
    - "develop an affordable and executable manufacturing process"
  - One of two major efforts:
    - "System Capability and Manufacturing Process Demonstration"
  - Post-CDR Assessment includes
    - "the maturity of critical manufacturing processes" (corresponds ~ MRL 7)
  - System Capability and Manufacturing Process Demonstration
    - "that system production can be supported by demonstrated manufacturing processes"
  - This effort shall end when:
    - "manufacturing processes have been effectively demonstrated in a pilot line environment" (MRL 8)

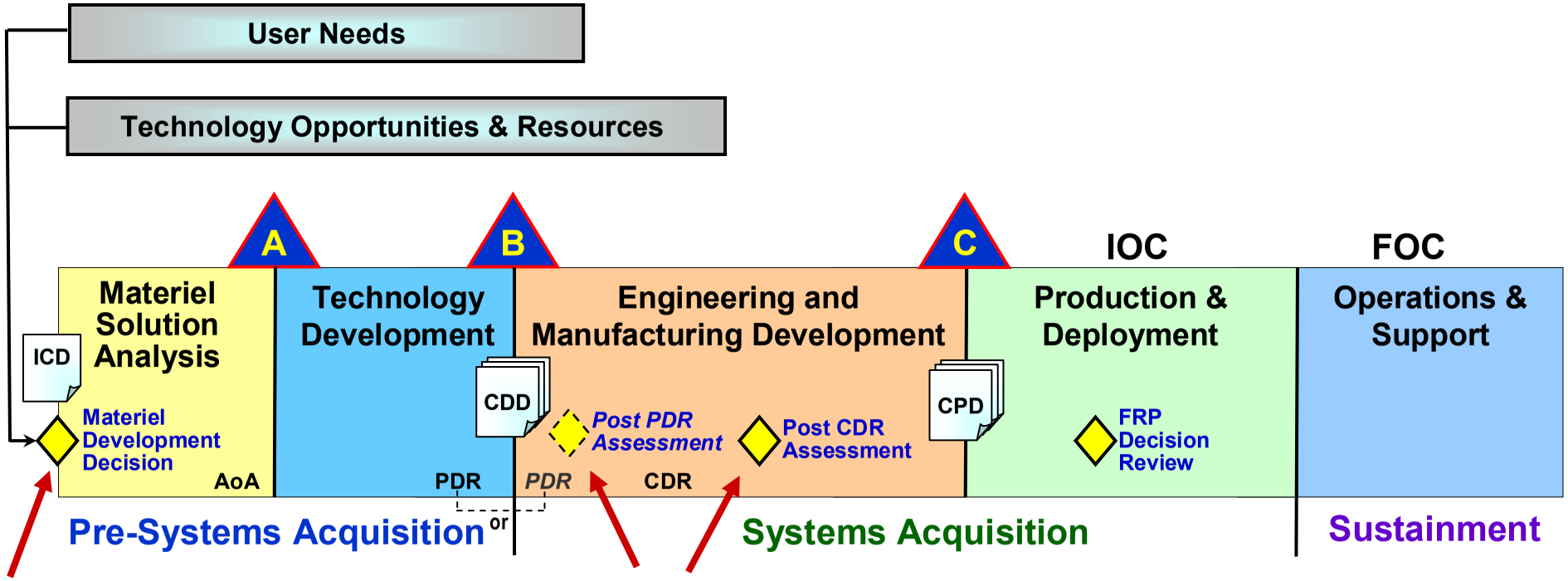
Manufacturing in DoDI 5000.02
[Post MS C]

- Production and Deployment Phase *(No significant changes)*
  - Entrance criteria:
    - **"no significant manufacturing risks"**
    - **"manufacturing processes under control (if Milestone C is full-rate production)"**
  - LRIP
    - This effort is intended to result in:
      - **"adequate and efficient manufacturing capability"**
  - Full-Rate Production Criteria
    - The knowledge required to support this approval shall include:
      - **"demonstrated control of the manufacturing process"**
      - **"the collection of statistical process control data"**
      - **"demonstrated control and capability of other critical processes"**

Manufacturing Impacts
Regulatory

- **New Regulatory Requirements:**
  - Approval of Technology Development Strategy prior to Release of final RFP for Technology Development Phase
    - Technology Development Strategy should include activities required to meet MRL 6 at Milestone B.
    - Proposals may be assessed for meeting the objectives of the TDS.
  - Approval of Acquisition Strategy prior to release of final RFP for EMD or any succeeding phase.
    - Acquisition Strategy includes the necessary manufacturing prototypes and system development tests.
    - Acquisition strategy should include goal for meeting MRL 8 at MS C.

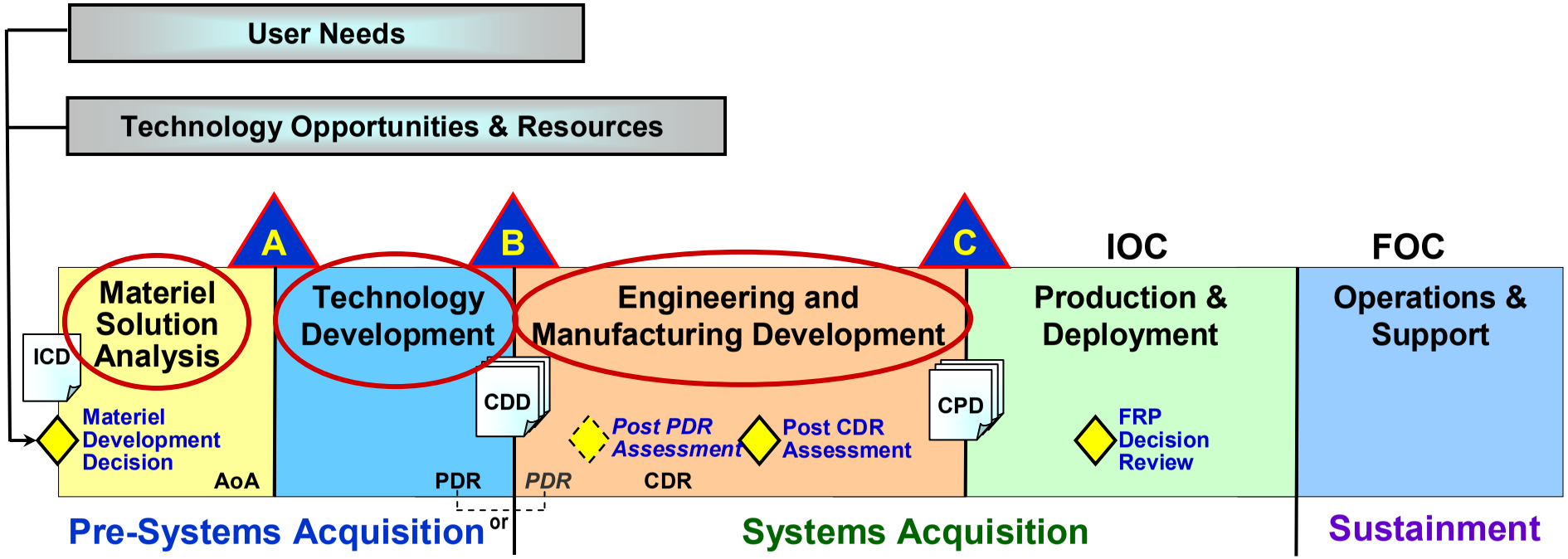
The Defense Acquisition Management Framework 2008



Changes to Decision Points

Old (2003)	New (2008)	Change from 2003
Concept Decision (CD)	Materiel Development Decision (MDD)	MDD required prior to entering the process at any point
N/A	*Post-PDR Assessment*	*MDA's assessment of PM's PDR Report (if PDR after MS B)*
Design Readiness Review DRR	Post-CDR Assessment	MDA's assessment of PM's CDR Report

The Defense Acquisition Management Framework 2008



Changes to Phases

Old (2003)	New (2008)	Change from 2003
Concept Refinement (CR)	Materiel Solution Analysis	More robust AoA (result of changes to JCIDS)
Technology Development (TD)		Competitive prototyping
Systems Development & Demonstration (SDD)	Engineering & Manufacturing Development (EMD)	More robust system engineering

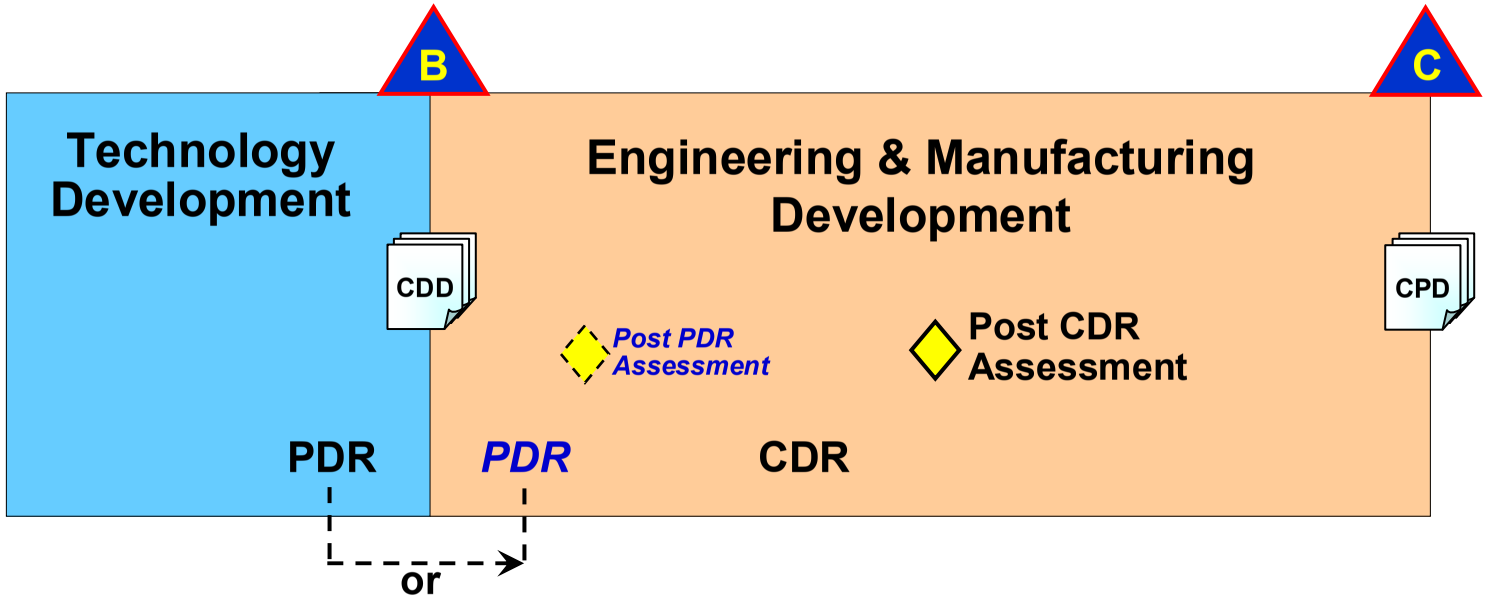
Systems Engineering (New in Encl 12)

- Systems Engineering Plan (SEP) required at each milestone
- MDA is approval authority for the SEP
- PEOs must have lead systems engineer – oversees SE across PEOs portfolio; reviews SEPs; assesses performance of subordinate systems engineers with PEO and PM
- Event-driven technical reviews required – with SMEs independent of program, unless waived by MDA.

RESULT: Systems Engineering Plan (SEP) is THE critical technical management document, and MUST include elements of Manufacturing Readiness.

The Defense Acquisition Management Framework 2008

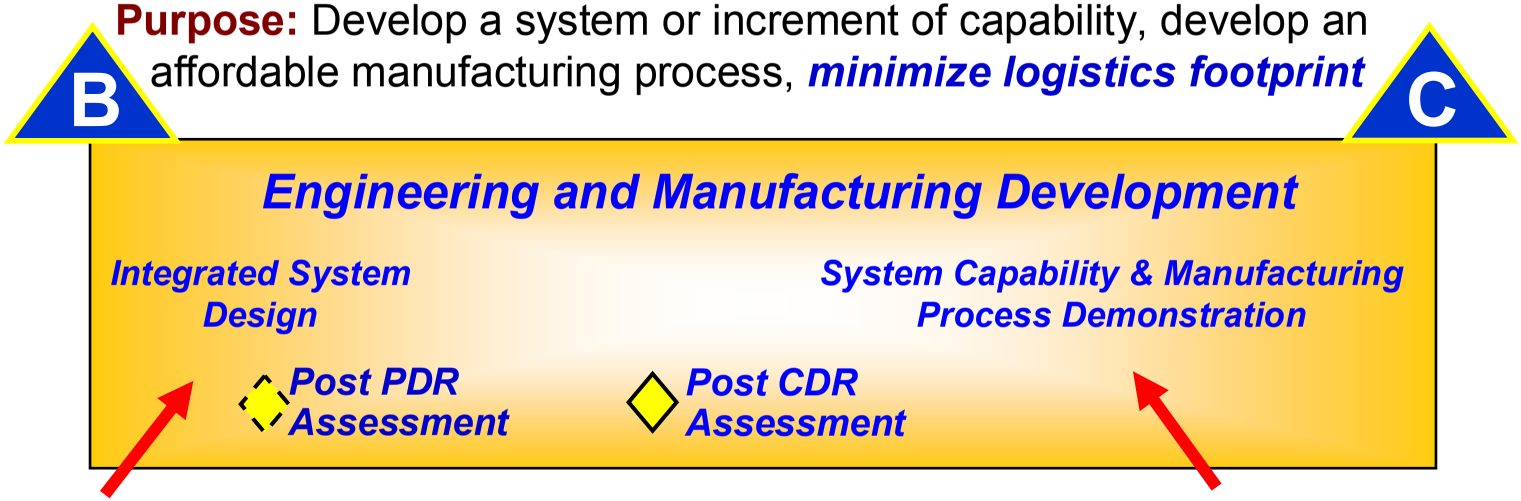
Preliminary Design Review



PDR Before Milestone B	PDR After Milestone B
• Planned for in Technology Development Strategy • PDR Report provided to MDA at MS B • Includes recommended requirements trades	• Planned for in Acquisition Strategy • PDR Report provided to MDA prior to Post PDR Assessment • Reflects requirements trades • At Post PDR Assessment, MDA considers PDR report; determines action(s) required to achieve APB objectives and issues ADM

Engineering & Manufacturing Development

Purpose: Develop a system or increment of capability, develop an affordable manufacturing process, ***minimize logistics footprint***



- **Enter:** Mature Technology; Approved Requirements; Full Funding in FYDP
- **Activities:** ***Define System of System Functionality & Interfaces***, Complete Detailed Design, ***System-Level PDR (as needed)/CDR, Establish Product Baseline,***
- **Guided by:** **CDD,** ***Acq Strategy, SEP & TEMP***
- **Exit:** ***Complete System-Level CDR and Post-CDR Assessments by MDA***

- **Enter:** ***Post-CDR Assessment and Establishment of initial Product Baseline***
- **Activities:** Developmental Testing (DT) Assesses Progress Against Technical Parameters, and Operational Assessments (OA) Against CDD
- **Guided by:** **CDD,** ***Acq Strategy, SEP & TEMP***
- **Exit:** System Demonstrated in Intended Environment using ***production-representative articles; Manufacturing Processes Demonstrated***; Meets Exit Criteria and MS C Entrance Requirements

New terms/requirements in *bold blue italics*