

Headquarters U.S. Air Force

Integrity - Service - Excellence

USAF Systems Engineering

***Presentation to the NDIA Systems & Software
Engineering Conference
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**Mr. Terry Jagers, SES
Deputy Assistant Secretary
Science, Technology, and Engineering**



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Agenda

- **AF Systems Engineering (SE) Revitalization**
- **AF Early SE Defined**
- **AF Early SE Initiatives**
- **Early SE Workforce Considerations**



AF SE Revitalization

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■ Accomplishments

- Published first AF Instruction on Systems Engineering (Jul 07)
- Approved first-ever software development guide
- Approved AF life cycle prototyping policy
- Approved SE plan (SEP) policy and streamlined staffing by 80%
- Developed integration readiness assessment tool and implementing during AF ACAT 1C program support reviews
- Funded interface management program for CSB support (FY10 POM initiative)
- Established concept development SE plan (ConSEP) and concept spec (CCTD) for space pre-A systems engineering
- Established AFIT SE Graduate Program and SE Masters' Degree Programs
- Co-sponsored NRC Study to define 25-yr AF STEM requirements

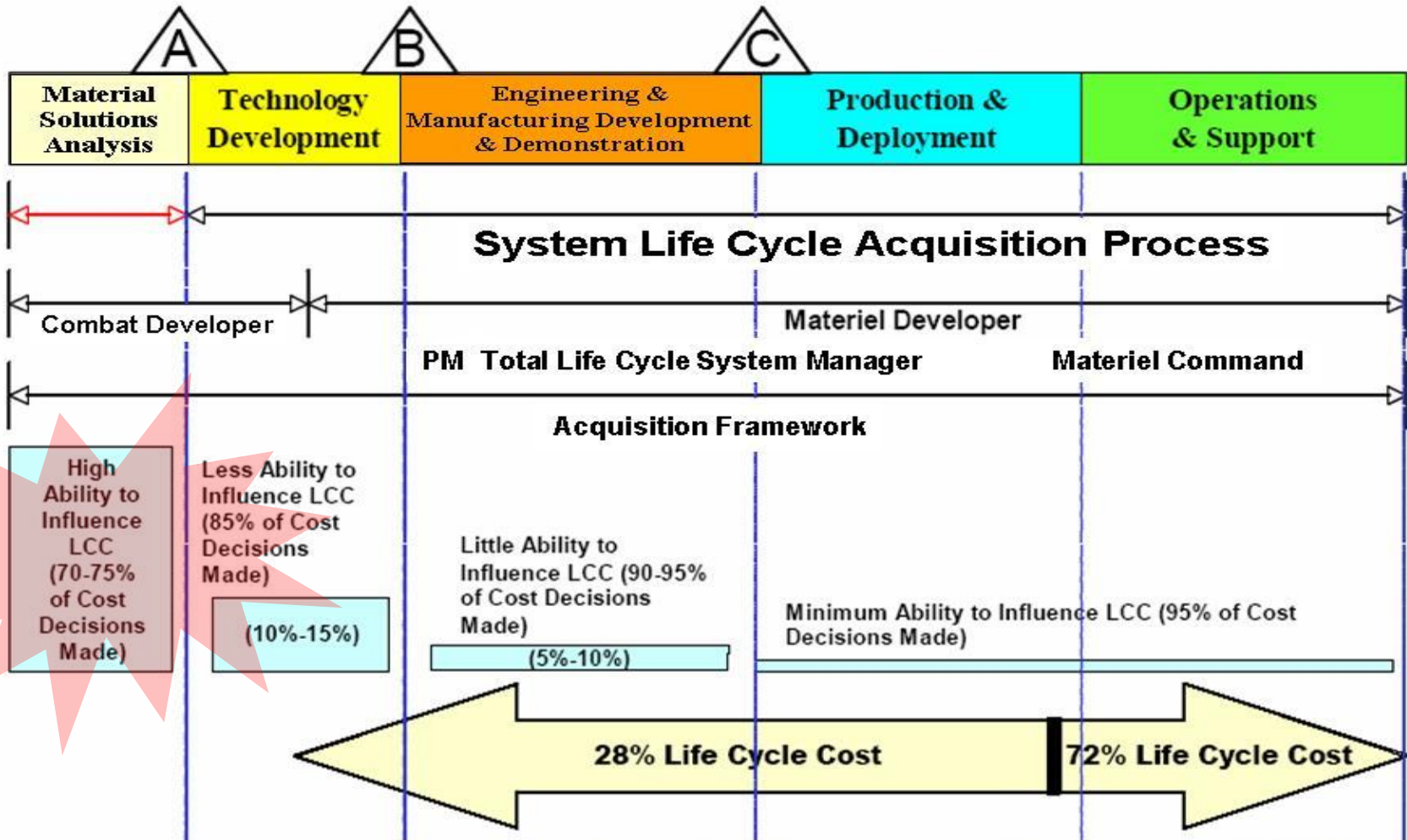
■ Initiatives

- Updating AF Scientist & Engineer Strategic Plan (goal 3 focused on system & software / specialty engineers for pre and post-A materiel development)
- Developing standardized program support reviews for all AF programs
- Collapsing discrete S&T and engineering polices to form seamless Research, Development, & Engineering Policy
- Standardizing pre-A ConSEP and CCTD policy & processes across the AF



“AF Supports NRC Early SE Recommendations”

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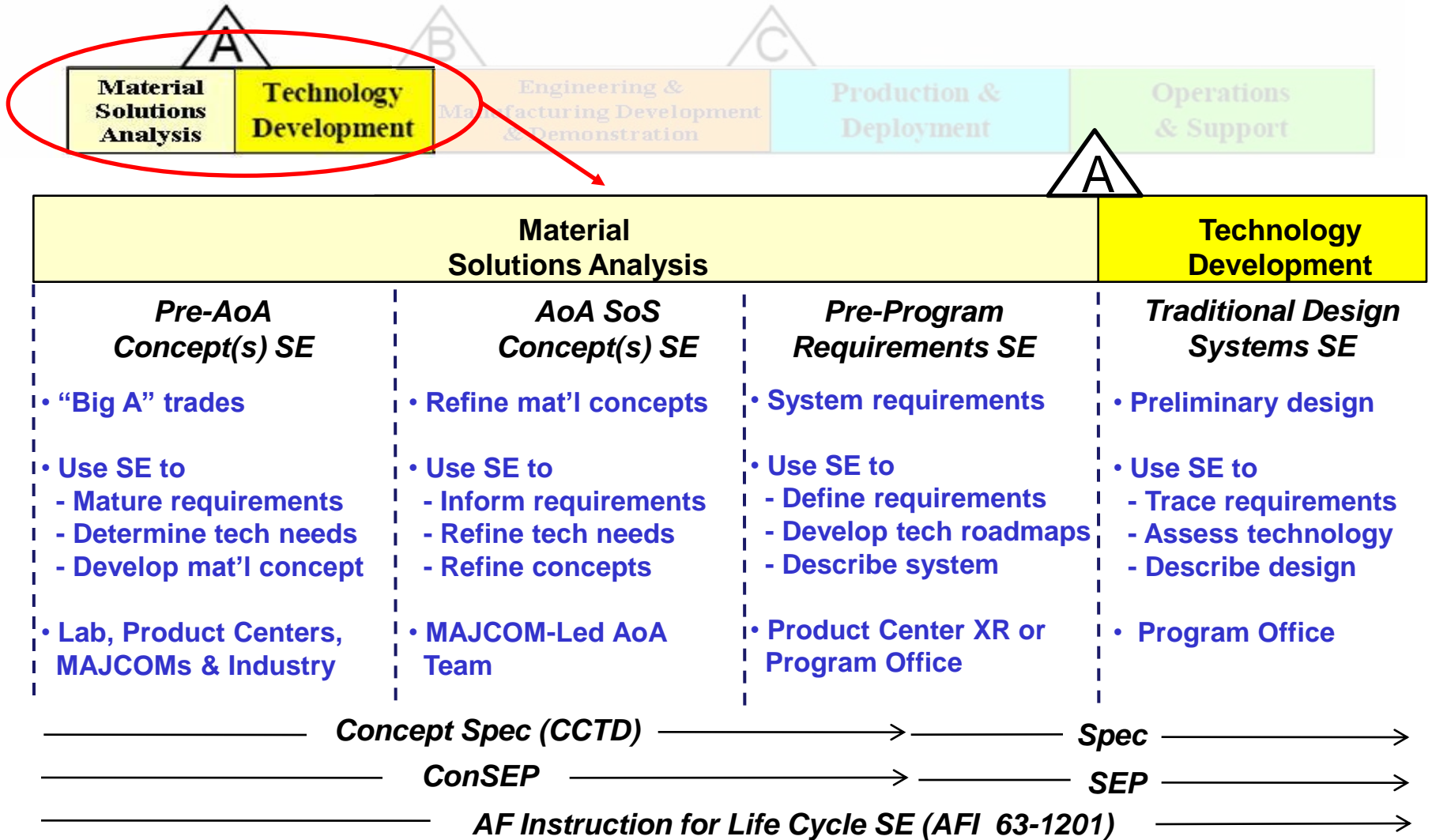


Adapted from "Pre-Milestone A and Early-Phase Systems Engineering: A Retrospective Review and Benefits for Future Air Force Systems Acquisition," Air Force Studies Board, National Research Council of the National Academies, Washington DC, 2008.
Original publication: Andrews, Richard, "An Overview of Acquisition Logistics," Defense Acquisition University, Fort Belvoir, VA, 2003.



AF Early SE Defined

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AF Early SE Initiatives

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■ Programs

- Increased pre-program engineering & analysis by 39% (+\$37M/yr) in FY10 POM
- Increased pre-program prototyping by 26% (+\$10M/yr) in FY10 POM

■ Policy & Process

- Approved CCTD guide and directing ConSEPs / CCTDs for all pre-program concept development in lab and product centers
- Directed prototypes IAW OSD policy (expect to see in FY11 or 12 POM)
- Multiple AFSO21 process initiatives (capability planning & tech assessment)

■ People

- Established AF Technology Transition Office to oversee BA-4 policy & programs
- Increased pre-program AF civilian engineers at MAJCOMs by 5%
- Identifying military engineers from AF military plus up (316K to 330K)
- Designating level III SPRDE-PSE Chief Engineer positions in pre-program developmental planning offices at product centers, in addition to program offices
- Designating level III SPRDE-SE Chief Engineer positions in AF Research Lab
- Updating S&E Strategic Plan to address early SE and specialty engineering competencies



Early SE Workforce Considerations

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- The numbers of “illities” specialists to adequately contribute to early SE (RAM, manufacturing, ESOH, HSI, etc) will have to be addressed
- Requirements officers, lab technologists, and product center developers should all have SE training (unlike post-A development, pre-A planning is a team sport)
- Offices doing early SE should be staffed by a seasoned & experienced workforce
- Early SE work priorities should be set at the 4-star level and not relegated to the early SE staff to guess (in this phase, everything can be chased)
- Critical acquisition positions (CAP) should be considered for concept developers outside of established program offices (for continuity and leadership)
- Writing, reviewing & approving early SE concept specs (CCTDs) will require new or adapted skills (or at least a revitalization of old ones)
- Pre-program prototyping will require integration risk and EMDD skills



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