

# Aeronautical Systems Center

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*Dominant Air Power: Design For Tomorrow...Deliver Today*

*Acquisition Research Program:  
Creating Synergy for Informed Change*



## Acquisition Changes-- and Challenges

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**Lt Gen Tom Owen  
Commander  
ASC**

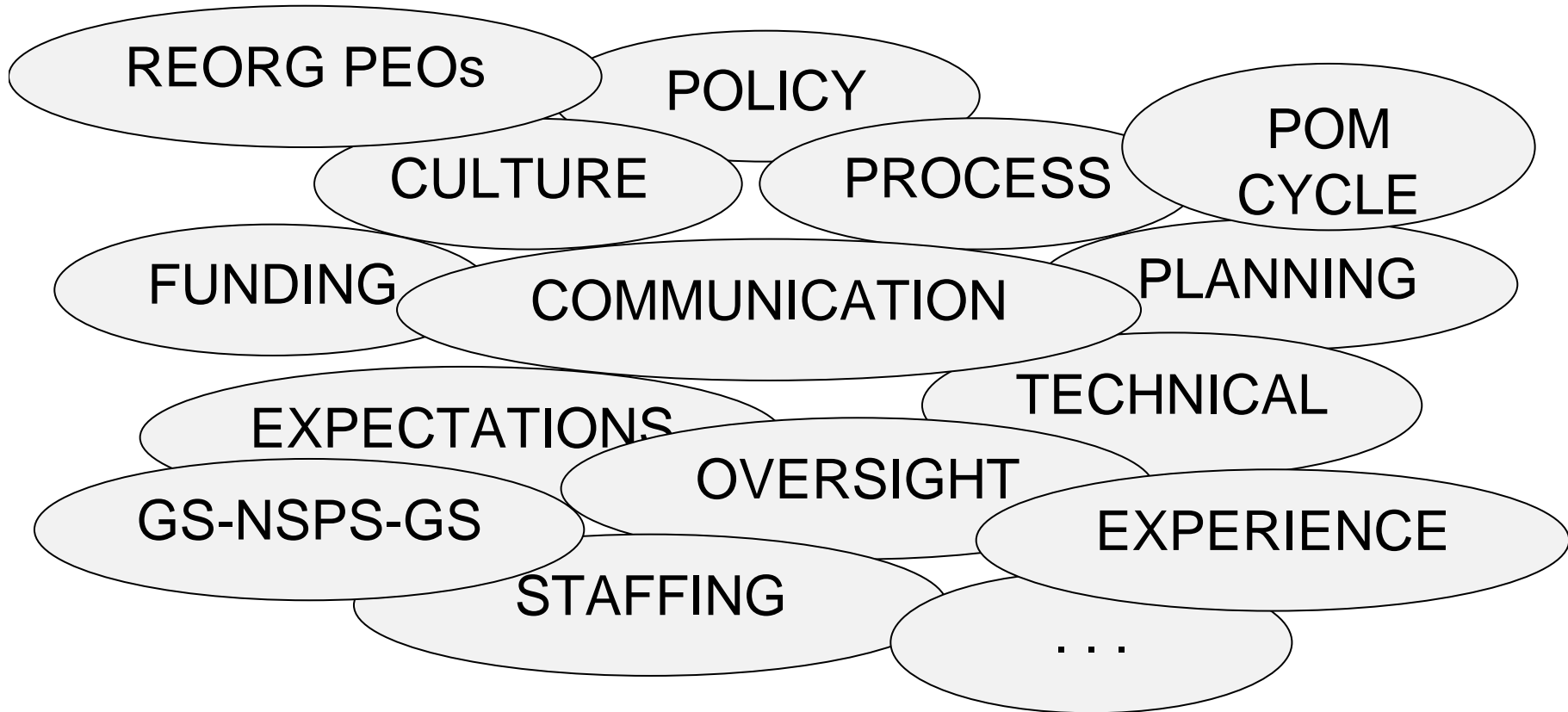
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7<sup>th</sup> Annual Acquisition Research Symposium, 11-13 May 2010



# Acquisition Challenges

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***IT'S NOT ABOUT THE CHANGES  
– IT'S HOW WE RESPOND TO THEM***



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# Agenda



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- **Recent DoD, AF policy changes**
- **Workload Implications**

- **Aeronautical Portfolio**
- **Imperatives**
- **Acquisition Improvement Plan**
- **AF, ASC Response**

- **Research topics requiring critical thinking**
- **Summary**

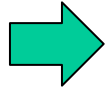


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# DoD Instruction 5000.02

## Operation of the Defense Acquisition System



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In 2008, SECDEF Robert Gates declared:

“...this department must ...**stop programs that significantly exceed their budget** or which spend limited tax dollars to buy more capability than the nation needs...we must ensure that **requirements are reasonable** and technology is adequately mature to allow the department to **successfully execute the programs...**”



Dec 08: New DoDI 5000.02 mandated:



(a) **New Acquisition milestone:**  
Materiel Development Decision (MDD)



(b) **New policy:** Competitive Prototyping in Technology Development Acquisition Phase



(c) **New policy:** Conduct Preliminary Design Review (PDR) prior to Milestone B

***DEVELOPMENT PLANNING ENSURES REQUIREMENTS ARE REASONABLE AND TECHNOLOGY IS MATURE***



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# Weapon System Acquisition Reform Act (WSARA), PL 111-23

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- “Ensure acquisition involvement and leadership in support of the lead command early in the development of program requirements”
- Ensure the AF has provided appropriate resources for
- Development planning and systems engineering organizations with **adequate numbers of trained personnel**
- In order to support key **requirements, acquisition, and budget** decisions
- For each major defense acquisition program prior to Milestone A approval through a rigorous systems analysis and systems engineering process ...

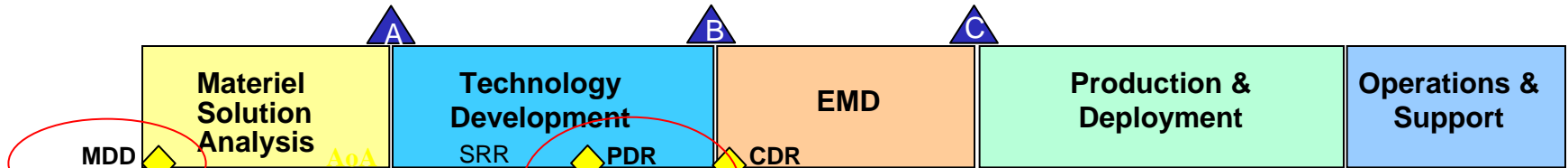
***“THE UNITED STATES AIR FORCE IS COMMITTED TO RECAPTURING ACQUISITION EXCELLENCE...”***



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# Workload Implications of WSARA and DoDI 5000.02

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**MDD:**  
 Concept descriptions for Analysis of Alternatives (AoA) guidance

**M/S-A Expectations:**

- Cost Baseline/ Estimations
- System Engineering Plan
- Technology Development Strategy
- Test and Evaluation Master Plan

**Competition thru PDR before M/S-B**

- Timing of approved operational requirements
- Acquisition strategy -- timing of down select and associated strategy
- Minimize time between PDR and M/S-B
- Timing of TRL 6

- Must support the DoD's 3 major decision support systems:
  - Planning, Programming, Budgeting, Execution (PPBE)
  - Joint Capabilities Integrated Development System (JCIDS)
  - Defense Acquisition System (DAS)

**IMPACTS ACROSS THE INTEGRATED LIFE CYCLE MANAGEMENT (ILCM) SPECTRUM**



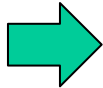
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# Aeronautical Systems Portfolio



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Pre MS-B	ASC/XR - Developmental Planning (DP)	MQ-X, CVLSP, T-X, Light Mobility Aircraft (LiMA), Joint Future Theater Lift (JFTL)
Acquisition Programs	77 AESW – Agile Combat Support	Human Systems, Propulsion, Simulators, Special Programs, Training Aircraft (T-1A, T-38, T-6A), Combat Electronics
	303 AESW – ISR	Global Hawk, Predator/Reaper, CV-22, Special Operations Aircraft (AC-130, HC/MC-130), Battlefield Airman, CSAR-X
	312 AESW – Fighter/ Bomber	F-22A, F-16, F-15, JSF, B-2, B-1, B-52, A-10
	516 AESW – Mobility	C-17, C-5, C-130, LAIRCM, KC-X, OSA/VIPSAM



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# Imperatives



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- **Get technologically superior capability into the hands of the warfighter – quicker**
  - Launch high confidence programs
- **Reduce Integrated Life Cycle Management (ILCM) time, cost, risk**
- **Invest in the future and our people**

***WITHIN A VERY DIVERSE PORTFOLIO - WITH MULTIPLE  
COMPLEX INTERDEPENDENCIES***



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# AF Acquisition Improvement Plan (AIP)



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## Air Force 2008-2010 Strategic Plan

- *Continue to Strengthen the Nuclear Enterprise*
- *Win Today's Fight*
- *Develop & Care for Airmen & Families*
- *Modernizing Aging Air & Space Inventories*
- **Recapture Acquisition Excellence**

- **Acquisition Improvement Plan (AIP)**
  - **Revitalize the Air Force acquisition workforce**
  - **Improve requirements generation process**
  - **Instill budget and financial discipline**
  - **Improve Air Force major systems source selections**
  - **Establish clear lines of authority and accountability within acquisition organizations**



**"THE AF IS COMMITTED TO RECAPTURING ACQUISITION EXCELLENCE..."**



# Revitalize the Acquisition Workforce



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- Responding to directed changes requires new skills
- Getting the right skills/skills mix and authorizations
  - Early program planning requires unique experience and skills not developed through training alone
- Ensuring ASC maintains a well trained acquisition workforce
  - While replacing a substantial number of current employees as they become eligible for retirement
- Recapturing acquisition expertise to translate operational requirements into system requirements-
  - Eroded after losing Development Planning function
- Taking care of our people and their careers
- Being ready for future work



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# Improve Requirements Generation Process



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- **Disciplined, repeatable processes from JCIDS CBA (pre-ICD) to AoA; Pre-MDD Focus**
  - Inform decision makers on technical feasibility of prospective concepts for materiel solutions
  - Initial integrated risk assessment addressing both operational and programmatic issues
- **Support realistic program formulation through application of early Systems Engineering**
  - Robust and disciplined up-front technical planning
  - **Solid technical foundation for the future program**
  - Reduce the chance of poorly planned concepts emerging from AoA with relatively high rankings
  - Extensive user/developer collaboration early & throughout lifecycle

**KEY ENABLER FOR DEVELOPMENT PLANNING**



# Definition of Development Planning



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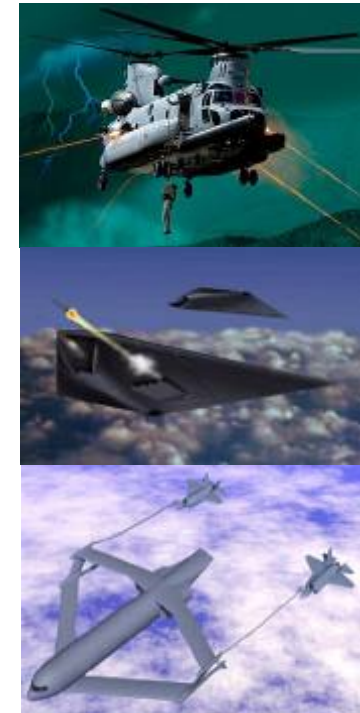
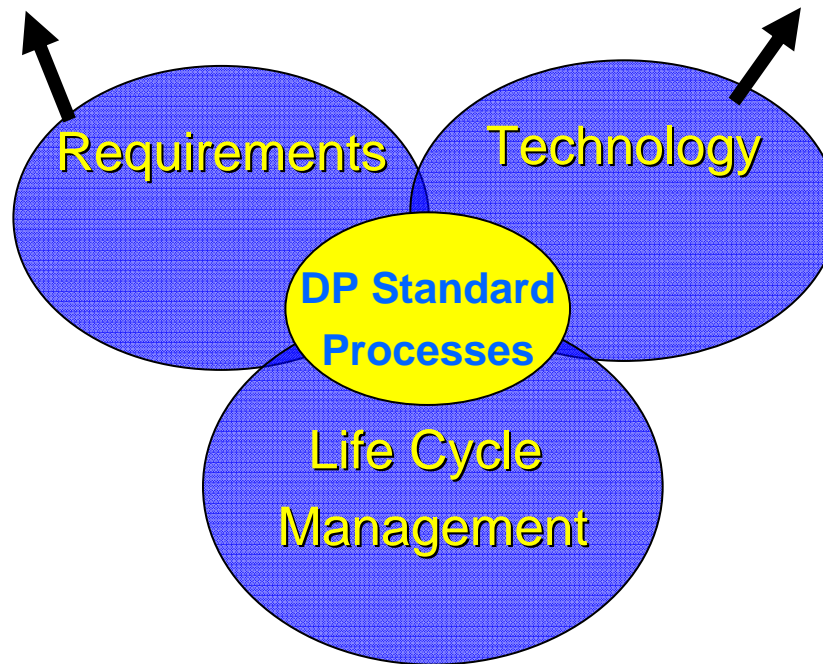
**“DP is a collaborative process bridging warfighter-identified capability needs to planning for acquisition of materiel solutions”**

- DRAFT AFMCI 10-605, “Development Planning”

- Bridge warfighter capability needs
- Evaluate system-of-systems concepts
- Incorporate life-cycle planning
- Understand technology gaps
- Identify/assess risks
- Launch high confidence programs



14





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# ASC Initiatives



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- **High Value Initiatives**
  - **Implement Integrated Life Cycle Management (ILCM) into our program planning & execution**
    - **Revitalize Development Planning**
    - **New work planning and acceptance**
    - **Assess impact of DoDI 5000.02 changes on ASC processes**
    - **Identify opportunities to streamline ILCM governance & reporting**
  - **Develop & Care for our People**
    - **Improve Strategic Hiring**
    - **Identify Skills to fully implement ILCM at ASC**
    - **Develop Our Workforce**

***LEANING FORWARD TO IMPROVE STARTING ACQUISITION PROGRAMS RIGHT***



# Leveraging Multiple Hiring Programs



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- **Expedited Hiring Agreement (EHA)**
  - Able to tap into special resources
- **NDA Section 852, DoD Acquisition Workforce Development Fund**
  - Identify types and skills needed in the acquisition workforce
- **Acquisition Excellence**
  - Increased manning priority for civilian and military acquisition positions
- **Science, Technology, Engineering and Mathematics (STEM)**
  - Resources will be affordable, scalable, agile, and seamlessly aligned with the AF mission and strategies – recruit using EHA
- **Competency Development Initiative (CDI)**
  - Enables a common approach to personnel management; utilizes a single methodology, management structure, assessment process across the AF

***NEED LEADERSHIP SUPPORT AND DISCIPLINE TO ENFORCE  
POLICIES & PROCEDURES***





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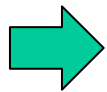
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# Research Topics Requiring Critical Thought



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- Science for sustainment
- Proactive anticipation of workload and the resources and skills it takes to systematically plan and assess capability needs and solutions
- How can a Continuous Improvement culture be instilled in a large hierarchical organization?
- New acquisition policy adds a number of reviews--what's the right balance of "Insight" vs "Oversight" in the acquisition system
- Collaboration ensures the requirer, developer, funder, acquirer, tester, sustainer are on the same page. How is this possible given the complexities of a Family of Systems & Systems of Systems environment?



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# Summary



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- **Change is a constant!**
  - Reorganizations, funding constraints, requirements, increased workload, people, improvement efforts
  - Renewed emphasis on Development Planning
- **It's not about the changes – it's how we respond to them**
  - Adapt and benefit from the challenge!
  - Continuous process improvement/adaptation

***REQUIRES A TEAM EFFORT TO RE-CAPTURE ACQUISITION EXCELLENCE!***



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# Back-Up

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# AF, ASC Responding

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- **Revitalize Development Planning**
  - Recognizing life cycle implications
- **Institutionalize Early Systems Engineering as a core enabling process**
- **Leverage multiple hiring programs to fill skills gaps**

***NEED LEADERSHIP SUPPORT AND DISCIPLINE TO ENFORCE  
POLICIES & PROCEDURES***



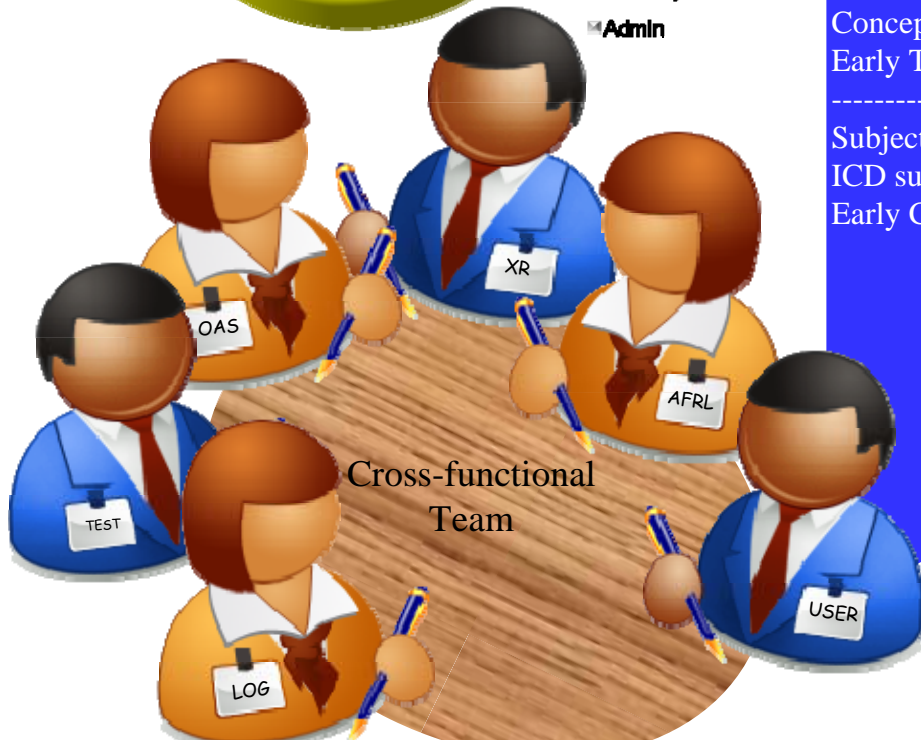
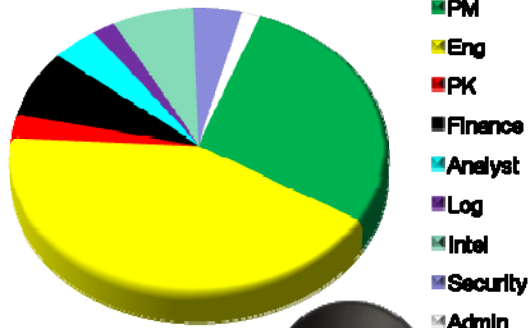
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# DP Informs Requirements Generation



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DP Skill Sets



## DP Team

### Collaborates to provide:

Concept definition & Tradespace analysis  
 Early Technology Evaluations

Subject Matter Experts (SMEs) for CBA  
 ICD support & analysis  
 Early CDD support

## Requirements

### that are:

Measurable  
 Testable  
 Attainable  
 Evaluatable  
 Executable

AFROC Validation  
 &  
 AFMC, SAF/AQ, &  
 AFOTEC Certification

*DP produces feasible, affordable, evaluatable requirements*



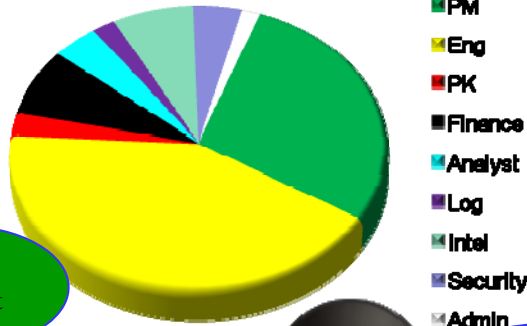
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# DP Team Provides Solution Options



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DP Skill Sets



## DP Team

### Collaborates to provide:

- Concept Definition/Tradespace Analysis
- Early Technology Evaluations
- AoA Support
- Materiel Options
- Market Research
- Advanced Concept Studies & Analysis
- Capability Roadmaps/Development Plans



**...to define the solution trade space**

***DP defines materiel solution courses of action***