



Precision Strike  
2008

Winter Roundtable



*"Precision Engagement – Strategic Context for the Long War"*

Arlington, VA

January 23, 2008

PSA Winter Roundtable 2008 Agenda

**JOINT CAPABILITY AREAS OVERVIEW:**

Joseph C. Bonnet, III—Deputy Director for Joint Force Development & Integration, Operational Plans & Joint Force Development Directorate (J-7), The Joint Staff

**APPLICATION OF ISR CAPABILITIES TO TIGHTEN THE KILL CHAIN:**

Colonel Dash Jamieson, USAF — AS/A2 Director, ISR Transformation

LRD LASE DES Video    mpeg Movie file *Window Media*

**THE JOINT CAPABILITIES INTEGRATION & DEVELOPMENT SYSTEM (JCIDS)—DEMONSTRATING RELEVANCE TO DECISION-MAKERS:**

Lieutenant Colonel Prince Valin, USAF—Chief, Kinetic Weapons Branch, Force Application Engagement Division (J-8), The Joint Staff

**MISSILES & WEAPONS MARKET IN PERSPECTIVE:**

Jeff Ryder—Director, Strategic Markets, BAE Systems



Precision Strike Association  
Winter Roundtable Agenda  
January 23, 2008

---

**U.S. HOUSE OF REPRESENTATIVES PERSPECTIVE ON DEFENSE WEAPONS SYSTEMS:**

*Representative Joe Sestak (D-PA, 7th District)*—Member, House Armed Services Committee  
(no presentation)

**GMLRS OVERVIEW & LESSONS LEARNED FROM IRAQ AND AFGHANISTAN:**

*Colonel Gary Kinne, U.S. Army*—TRADOC Capabilities Manager, Precision Fires, Rocket & Missile Systems  
(presentation not approved for distribution)

**CONGRESSIONAL OUTLOOK—DEFENSE CHALLENGES:**

*Richard B. Ladd*—Chairman, Robison International, Inc.  
(presentation not approved for distribution)

**KEYNOTE ADDRESS: TOMORROW'S PRECISION ENGAGEMENT BATTLEFIELD CHALLENGES—  
DOD'S NATIONAL DEFENSE STRATEGY:**

*Honorable Ryan Henry*—Principal Deputy Under Secretary of Defense for Policy  
(presentation not approved for distribution)

**JOINT CAPABILITY AREAS OVERVIEW:**

*Joseph C. Bonnet, III*—Deputy Director for Joint Force Development & Integration, Operational Plans & Joint Force Development Directorate (J-7), The Joint Staff

**CONGRESSIONAL STAFFERS' PANEL—PRIORITIES AND ISSUES:**

Greg Kiley  
(presentation not approved for distribution)

**A POLITICALLY INCORRECT GUIDE TO DEFENSE POLICY IN WASHINGTON**

*Peter Huessy*—President, GeoStrategic Analysis  
(presentation not approved for distribution)

**APPLICATION OF ISR CAPABILITIES TO TIGHTEN THE KILL CHAIN:**

*Colonel Dash Jamieson, USAF* — AS/A2 Director, ISR Transformation

**THE JOINT CAPABILITIES INTEGRATION & DEVELOPMENT SYSTEM (JCIDS)—DEMONSTRATING  
RELEVANCE TO DECISION-MAKERS:**

*Lieutenant Colonel Prince Valin, USAF*—Chief, Kinetic Weapons Branch, Force Application Engagement Division (J-8), The Joint Staff

**EMERGING TECHNOLOGIES FOR PRECISION WEAPONRY**

*Stephen Welby*—Director, Tactical Technology Office, Defense Advanced Research Projects Agency  
(presentation not approved for distribution)

**MISSILES & WEAPONS MARKET IN PERSPECTIVE:**

Jeff Ryder—Director, Strategic Markets, BAE Systems



# *Joint Capability Areas*

*Presented to*

*Future of Precision Strike Conference*

*23 Jan 08*

*Mr Joe Bonnet*

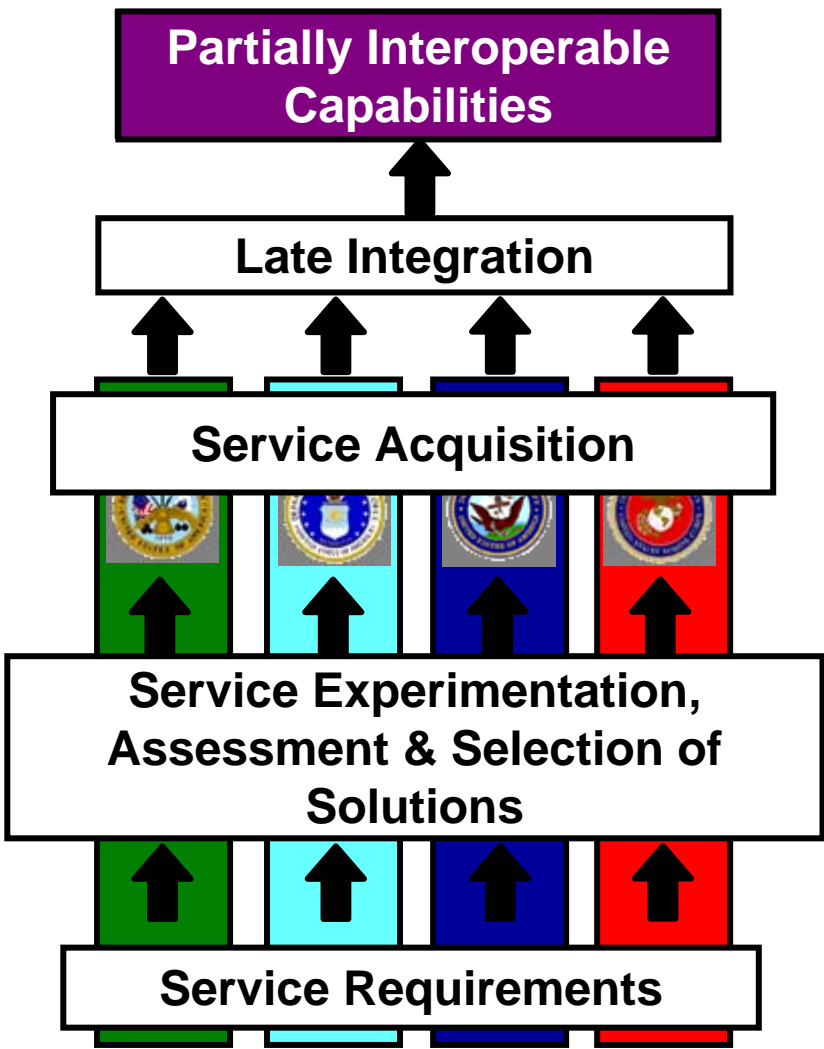
*Deputy Director for Force Development & Integration*

*Joint Staff J-7*

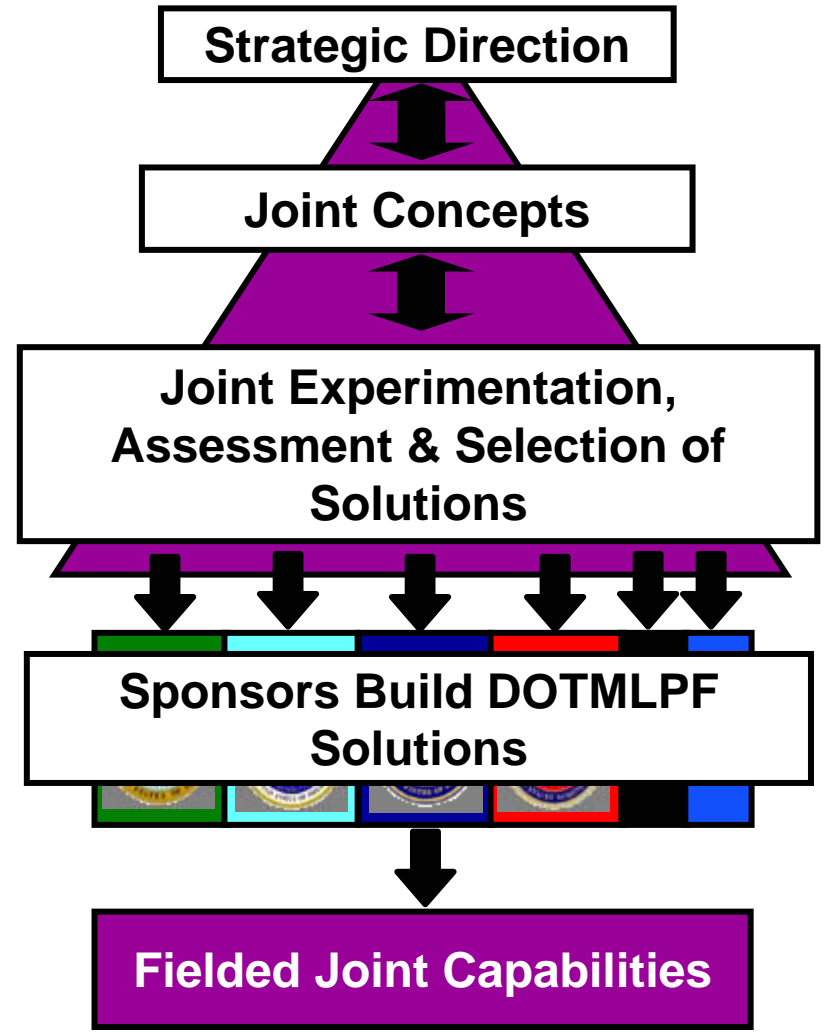


# Capabilities Based Approach

*Bottom-Up  
Threat Based*



*Top-Down  
Capabilities Based*



# CBP Process Objectives

A top-down, competitive process that weighs options vs. resource constraints across a spectrum of challenges

- **Link DoD decision-making to the Defense Strategy**
  - Apportion risk across external challenges – traditional, irregular, catastrophic, and disruptive
  - At the level of portfolios and current/future concepts
- **Inform risk tradespace – identify joint capability gaps, redundancies, and opportunities**
- **Facilitate the development of affordable capability portfolios that:**
  - Hedge against uncertainty
  - Increase costs to adversaries while suppressing our costs
- **Integrate and synchronize the requirements process, PPBE, and the acquisition system**

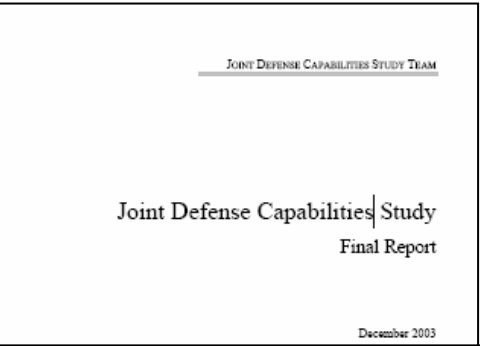
# *JCAs... What Are They?*



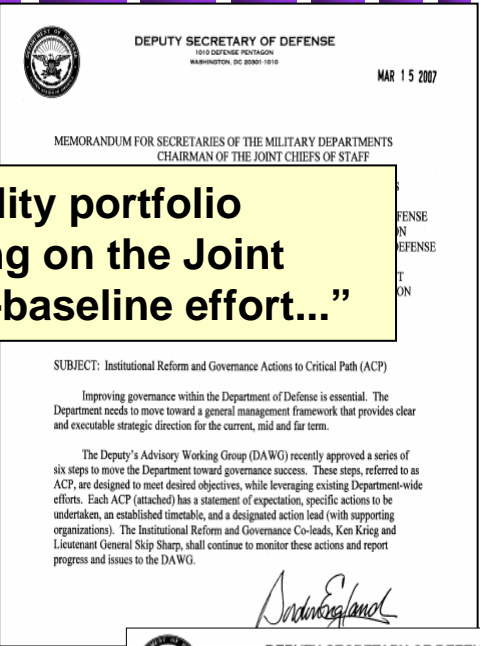
**“...integral part of the evolving Capabilities-Based Planning process...the beginnings of a common language to discuss and describe capabilities across many related Department activities and processes.”  
(SecDef Memo, 6 May 2005)**

**JCAs are collections of like DOD activities functionally grouped to support capability analysis, strategy development, investment decision making, capability portfolio management, and capabilities-based force development and operational planning.  
(JCA Baseline Reassessment Terms of Reference)**

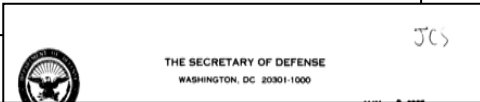
# JCA Intent



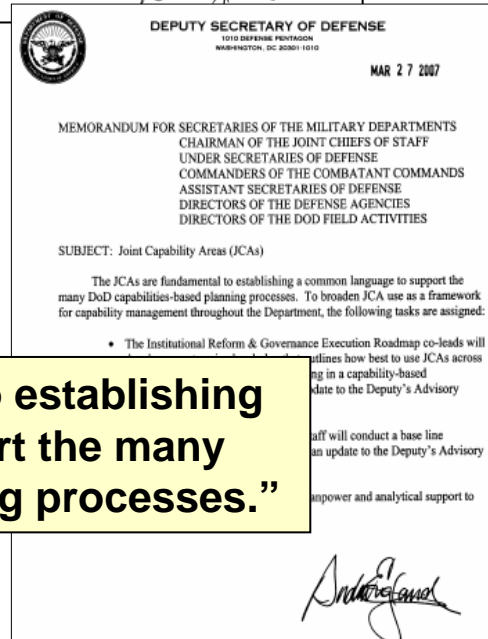
**“Develop a capability portfolio framework, building on the Joint Capability Area re-baseline effort...”**



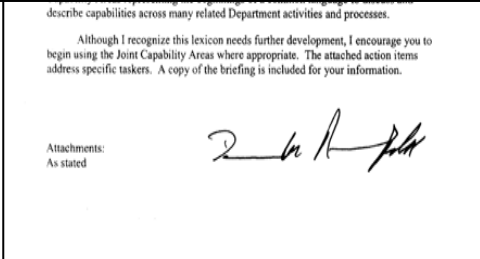
**“...these manageable groups provide a common lexicon to compare Service contributions to joint warfighting and enterprise support and, therefore, support cross-Service trades.”**



**“As an integral part of the evolving Capabilities-Based Planning process...Joint Capability Areas representing the beginnings of a common language to discuss and describe capabilities across many related Department activities and processes.”**



**“The JCAs are fundamental to establishing a common language to support the many DoD capabilities-base planning processes.”**



# *What Problem Does JCAs Address?*

- **DOD processes currently talk in five different languages...**
  - Policy talks in terms of strategic priorities
  - Programming talks in terms of appropriations and PEs
  - Planning talks in terms of force packages
  - Acquisition talks in terms of cost, schedule and performance parameters
  - Requirements talks in terms of capabilities and gaps
- **You cannot have an enterprise-wide capabilities-based strategy-to-task discussion without a common language**
- **JCAs have provided a rudimentary language which have some traction, but fall short of being ....**

*DoD's Capabilities-Based Planning "Rosetta Stone"*

# JCA Baseline Reassessment Direction



DEPUTY SECRETARY OF DEFENSE

1010 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1010

MAR 27 2007

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARIES OF DEFENSE  
COMMANDERS OF THE COMBATANT COMMANDS  
ASSISTANT SECRETARIES OF DEFENSE  
DIRECTORS OF THE DEFENSE AGENCIES  
DIRECTORS OF THE DOD FIELD ACTIVITIES

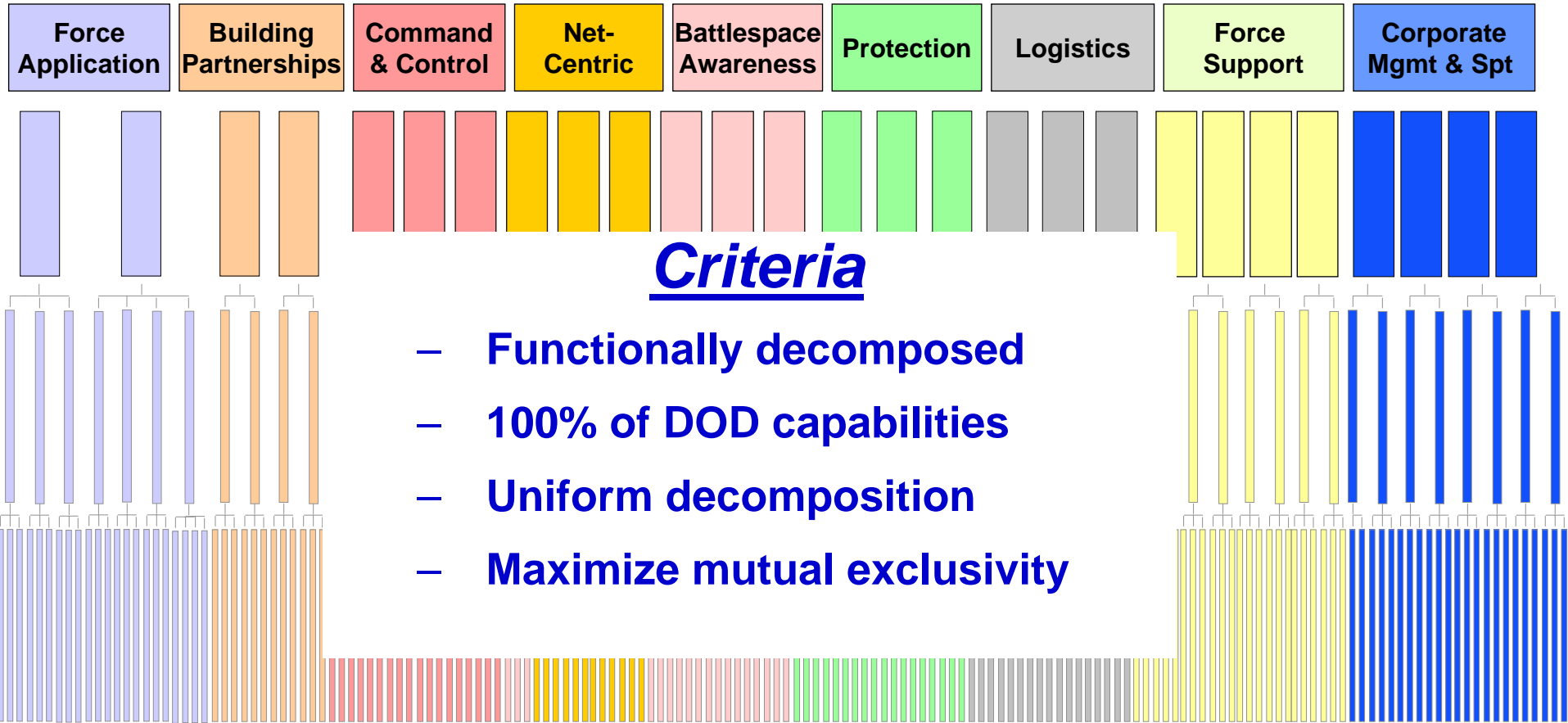
SUBJECT: Joint Capability Areas (JCAs)

**“...To broaden JCA use as a framework for capability management throughout the Department, the following tasks are assigned:**

- The Chairman of the Joint Chiefs of Staff will conduct a base line reassessment of the JCAs and provide an update to the Deputy’s Advisory Working Group...”**

ensure key objectives are achieved is appreciated.

# JROC Decision on Top-level JCAs

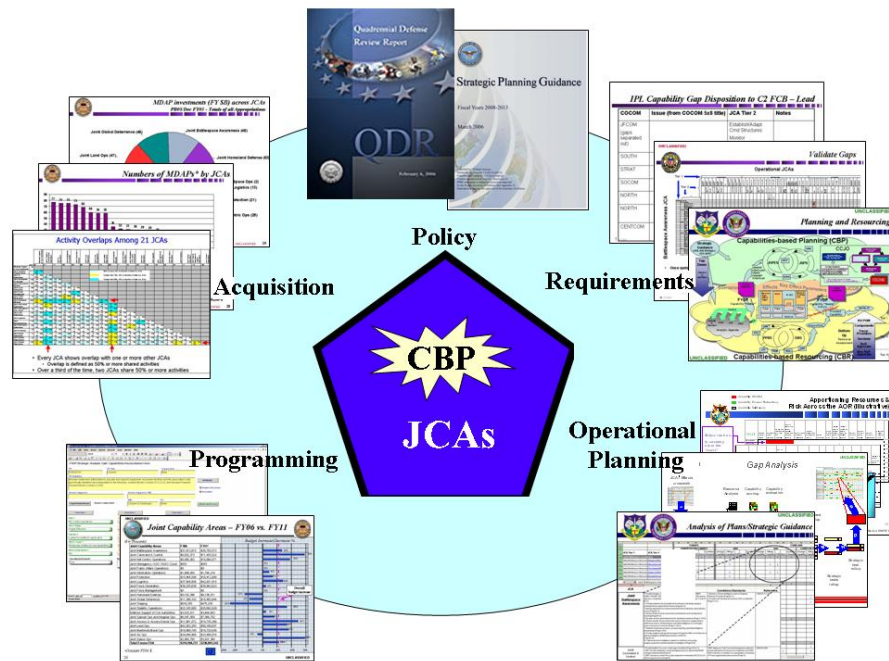


# Current JCA Usage

- Organizing construct for GDF & JPG
- Organizing construct for assuming risk / increasing focus
- Strategy to task analysis

Operational to Functional Concept crosswalk

- JCIDS documents
- IPL submissions
- Capability Prioritization
- Capability gap assessments
- Lines of Joint Experimentation (LOJX)



Matrix Mapping Tool mapping to MDAPS

- Joint Testing & Evaluation analysis construct
- Program Element mapped to JCAs

- Linking Plans to Resources (LPTR)
- Defense Readiness Reporting System (DRRS)
- Global Force Management
- Critical Infrastructure Program vulnerability analysis



# Joint Operations Concepts

## STRATEGIC GUIDANCE

### Capstone Concept for Joint Operations (CCJO)

*Broad statement of how to operate 8-20 years in the future*

### Joint Operating Concepts (JOC)

*Operational design and capabilities*

1. Homeland Security 1.0 (Feb 04)  
Homeland Defense and Civil Support 2.0 (in-progress)
2. Strategic Deterrence 1.0 (Feb 04)  
Deterrence Operations 2.0 (Aug 06)
3. Major Combat Operations 1.0 / 2.0 (Sep 04 / Aug 06)
4. Stability Operations 1.0 (Sep 04)  
Military Support to Stabilization, Security, Transition and Reconstruction Operations 2.0 (Aug 06)
5. Irregular Warfare 1.0 (Feb 07)
6. Shaping 1.0 (in-progress)

Operational Context

### Joint Functional Concepts (JFC)

*Enduring functional capabilities*

1. Battlespace Awareness (Dec 03) ✓
2. Command and Control (Feb 04) ✓
3. Force Application (Feb 04) ✓
4. Focused Logistics (Dec 03) ✓
5. Force Management (Jun 05) \* ✓
6. Net-centric (Apr 05) ✓
7. Protection (Jun 04)
8. Training (in-work) \*

JCAS

JCAS  
Support

### Joint Integrating Concepts (JIC)

*JOC and/or JFC-derived tasks, conditions and standards*

- |  |   |
|--|---|
| 1. Global Strike (Jan 05)                      | 7. Joint Command and Control (Aug 05)           |
| 2. Joint Forcible Entry Operations (Sep 04)    | 8. Net-Centric Operational Environment (Oct 05) |
| 3. Joint Undersea Superiority (Jan 04)         | 9. Persistent ISR (in-progress)                 |
| 4. Seabasing (Aug 05)                          | 10. Combating WMD (in-progress)                 |
| 5. Integrated Air and Missile Defense (Dec 04) |   |
| 6. Joint Logistics-Distribution (Dec 05)       |   |

Force Support \* (+)  
Building Partnerships  
Corporate Mgmt & Spt

## Military Support to Stabilization, Security, Transition, and Reconstruction Operations Joint Operating Concept



Version 2.0

December 2006

### Appendix C-2: Joint Capability Area Matrix

SSTR Capability	Most Relevant JCA(s)		Comparison - Implications
	Tier 1	Tier 2	
U.S. Government Institutional Agility. U.S. government institutions must be able to distribute funds, goods, and services rapidly and efficiently to successfully conduct SSTR operations	Joint Command & Control  Joint Logistics  Joint Shaping  Joint Stability Operations  Joint Interagency/IGOVN CO Coordination	Exercise Command Leadership; Manage Risk  Joint Deployment/Rapid Distribution; Agile Sustainment; Joint Theater Logistics; Multinational Logistics  Building Military Partner Capability; Building Military Partner Capacity  Basic Services Restoration; Humanitarian Assistance; Reconstruction  All Tier2 Joint IAIMGNNGO Coordination JCAs	JCAs don't specifically address distribution of funds
The ability for DOD to systemically plan, program, budget, and allocate funds for SSTR operations	Joint Force Management	Future Capability Identification; Planning	JCAs don't cover PP&E cycle
The ability for U.S. commanders to have access to contingency funds that can be spent in a flexible and adaptive manner.	Joint Force Management	Future Capability Identification; Planning	JCAs don't cover PP&E cycle
The ability for U.S. commanders to rapidly bring to bear reliable, expert foreign and domestic contractor support a wide variety of SSTR undertakings.	No Tier1 JCAs	No Tier2 JCAs	JCAs don't address contingency funds; ties to Tier2 Restoration of Basic Services under Joint Stability Operations.

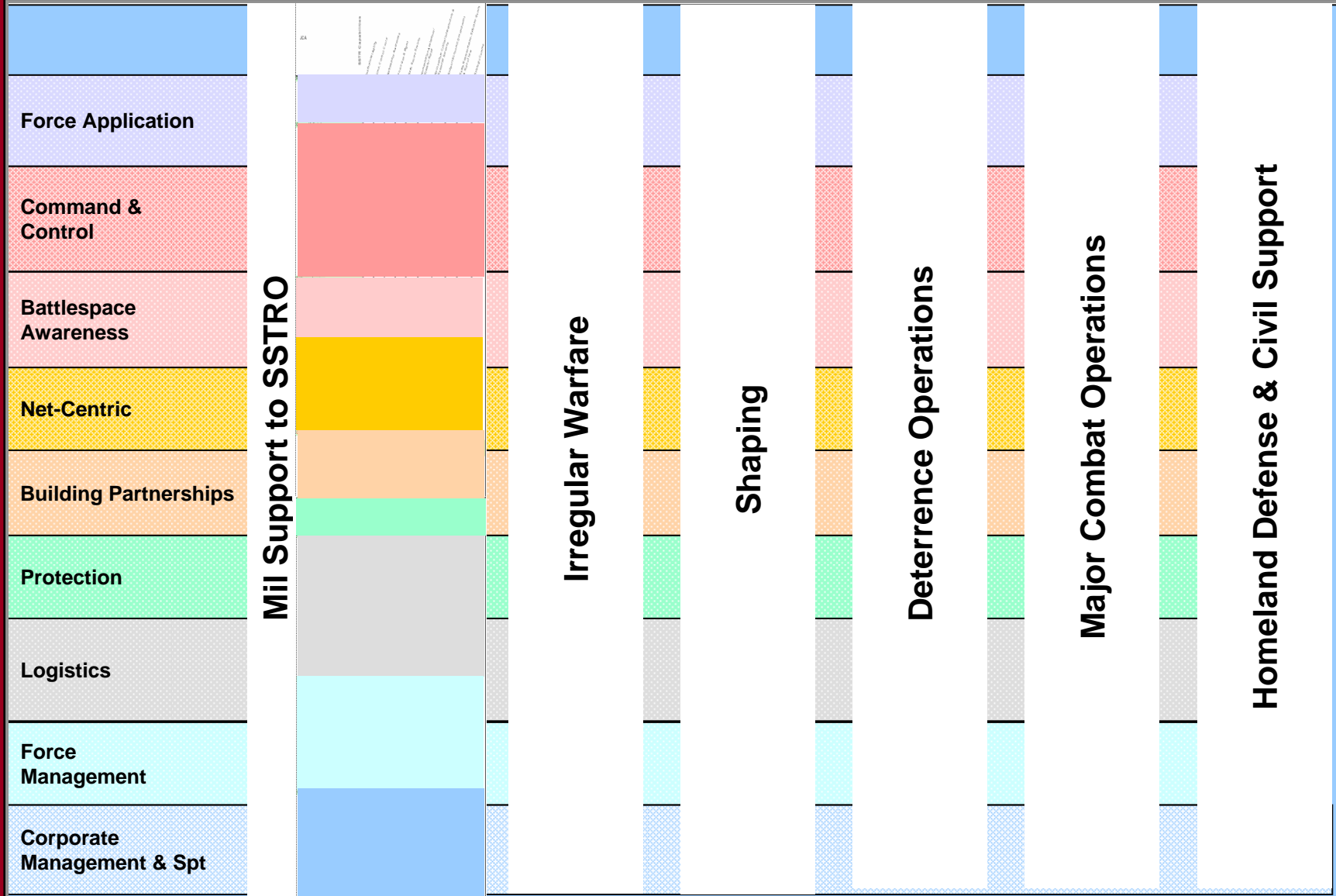
# SSTR JOC - 10 Critical Capabilities - Aligned to JCAs

JCA	SSTR Capabilities	Institutional Agility	Cmd, Control, Coord	Battlespace Awareness	Force Gen & Mgmt	Safe, Secure Environ	Humanitarian Assistance/ Disaster Relief	Reconstitute Critical Infrastructure & Essential Services	Support Economic Development & Rule of Law	Strategic Comms
<b>Force Application</b>										
<b>Engagement</b>										
	Kinetic fires					X				
	Non-Kinetic fires					X				
<b>Maneuver</b>										
	Maneuver to Engage									
	Maneuver to Insert									
	Maneuver to Influence									
	Maneuver to Secure					X				
<b>Command &amp; Control</b>										
<b>Organize</b>										
	Establish & maintain unity of effort w/ mission partners	X								
	Structure organization to mission	X								
	Foster organizational collaboration	X								
<b>Understand</b>										
	Develop & Share Situational Awareness	X								
	Develop knowledge	X								
	Share knowledge	X								
<b>Planning</b>										
	Analyze problem	X								
	Apply situational understanding	X								
	Develop strategy	X								
	Develop courses of action	X								
	Analyze course of action	X								
<b>Decide</b>										
	Manage risk									
	Select actions									
	Establish rule sets									
	Establish intent and guidance									
	Infuit									
<b>Direct</b>										
	Communicate intent and guidance									
	Task									
	Establish metrics									
<b>Monitor</b>										
	Assess compliance with guidance									
	Assess effects									
	Assess achievement of objectives									

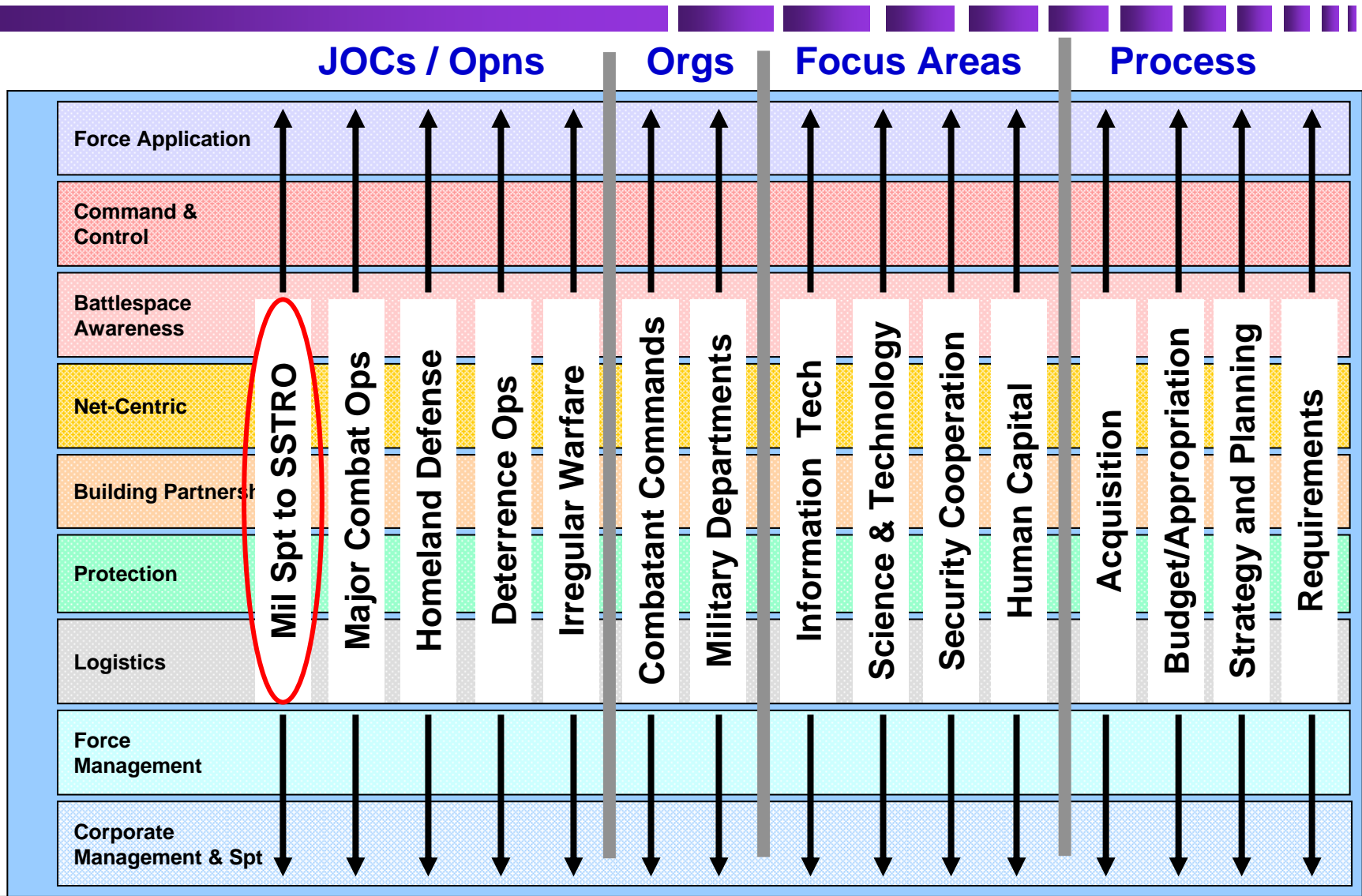
JCA	Strategic Comms	Force Application	Command & Control	Humanitarian Assistance/ Disaster Relief	Reconstitute Critical Infrastructure & Essential Services	Support Economic Development & Rule of Law	Strategic Comms
Strategic Comms	X						X
Force Application		X					
Command & Control			X				
Humanitarian Assistance/ Disaster Relief				X			
Reconstitute Critical Infrastructure & Essential Services					X		
Support Economic Development & Rule of Law						X	
Strategic Comms	X						X

## Joint Operating Concepts (JOC)

### Joint Functional Concepts (JFC) Functional capabilities



# Vision



*Functionally aligned JCAs simplify the framework & increases utility across DOD by facilitating cross-referenced views by operations, components, processes, and activities*

# LPTR : Informing Apportionment of Risk & Resources Across Plans

- Capability Shortfall
- Capability Excess / Redundancy
- Capability Sufficiency

RWOT

Tier	CRITICAL EFFECTS	Adversary unable to conduct a surprise attack (H)	Adversary WMD capabilities are destroyed or secured (H)	Adversary leadership is isolated and neutralized (I)	Adversary refrains from threatening freedom of navigation (I)	Adversary is isolated from international support (L)
1	TIER 1 JCA / 2 JCA					
2	Contingency Basing (H)		X			
3	Counter Operational Mobility (L)				X	
4	Forceful Entry (L)		X			
5	Freedom of Navigation (H)		X			
6	LOC Protection (H)			X		
7	Seabasing (L)				X	
8	JOINT AIR OPERATIONS					
9	Air Interdiction (L)					
10	Offensive Counterair Ops (H)		X			
11	Strategic Attack (L)					
12	Tactical Air Support (L)			X		
13	JOINT BATTLESPACE AWARENESS					
14	Analysis & Production (H)	X	X			
15	Dissemination & Integration (H)			X		

HLD

Tier	CRITICAL EFFECTS	Adversary unable to conduct a surprise attack (H)	Adversary WMD capabilities are destroyed or secured (H)	Adversary leadership is isolated and neutralized (I)	Adversary refrains from threatening freedom of navigation (I)	Adversary is isolated from international support (L)
1	TIER 1 JCA / 2 JCA					
2	Contingency Basing (H)		X			
3	Counter Operational Mobility (L)				X	
4	Forceful Entry (L)		X			
5	Freedom of Navigation (H)		X			
6	LOC Protection (H)			X		
7	Seabasing (L)				X	
8	JOINT AIR OPERATIONS					
9	Air Interdiction (L)					
10	Offensive Counterair Ops (H)		X			
11	Strategic Attack (L)					
12	Tactical Air Support (L)			X		
13	JOINT BATTLESPACE AWARENESS					
14	Analysis & Production (H)	X	X			
15	Dissemination & Integration (H)			X		

MCO

Phase	CRITICAL EFFECTS	Adversary unable to conduct a surprise attack (H)	Adversary WMD capabilities are destroyed or secured (H)	Adversary leadership is isolated and neutralized (I)	Adversary WMD capabilities are destroyed or secured (H)	Adversary refrains from threatening freedom of navigation (I)	Adversary is isolated from international support (L)
1	TIER 1 JCA / Tier 2 JCA						
2	JOINT ACCESS & ACCESS DENIAL						
3	Contingency Basing (H)		X				
4	Counter Operational Mobility (L)				X		
5	Forceful Entry (L)		X				
6	Freedom of Navigation (H)		X				
7	LOC Protection (H)			X			
8	Seabasing (L)				X		
9	JOINT AIR OPERATIONS						
10	Air Interdiction (L)						
11	Offensive Counterair Ops (H)		X				
12	Strategic Attack (L)						
13	Tactical Air Support (L)			X			
14	JOINT BATTLESPACE AWARENESS						
15	Analysis & Production (H)	X	X		X		
16	Dissemination & Integration (H)			X			
17	Evaluation & Feedback (H)	X	X	X	X		
18	Observation & Collection (H)	X	X	X	X		
19	Planning & Direction (H)	X	X	X	X		
20	Processing & Exploitation (H)	X	X	X	X		
21	JOINT COMMAND & CONTROL						
22	Communications, Information & Interop Develop & Maintain Shared Situational Awareness & Understanding (H)	X	X	X	X		X
23	Establish/Adapt Command Structures & Enable Global & Regional Collaboration (I)	X	X	X	X		X
24	Exercise Command Leadership (I)	X	X	X	X		X
25	Leverage Mission Partners (I)						X
26	JOINT MARITIME LITORAL OPERATIONS						
27	Maritime Interdiction (H)		X				
28	Maritime/Littoral Expeditionary Operations (L)				X	X	
29	Maritime/Littoral Fires					X	
30	Ocean/Hydro/River Survey & Support Ops						
31	Surface Warfare						
32	Undersea Warfare						
33	JOINT NET-CENTRIC OPERATIONS						

Rather than reduce mission risk by mitigating this capability gap, a Commander may prefer to reduce theater risk by mitigating this capability gap that is shared across multiple missions.

Similarly, a Commander can look across multiple missions to identify areas in which to accept increased risk that have minimal theater-wide impact.

Phase 1

Phase 2

Phase 3

Phase 4

# Near-, Mid-, and Long-term Assessments

**Execution / Budget Year (0-24 months: Current Force)**

The screenshot shows the DRRS interface with a tree view of effects. A red circle highlights the 'UW' (Undersea Warfare) assessment result, which is currently green. A red arrow points from this circle to the 'UW' assessment in the table below.

**FYDP (2-7 years: Programmed Force)**

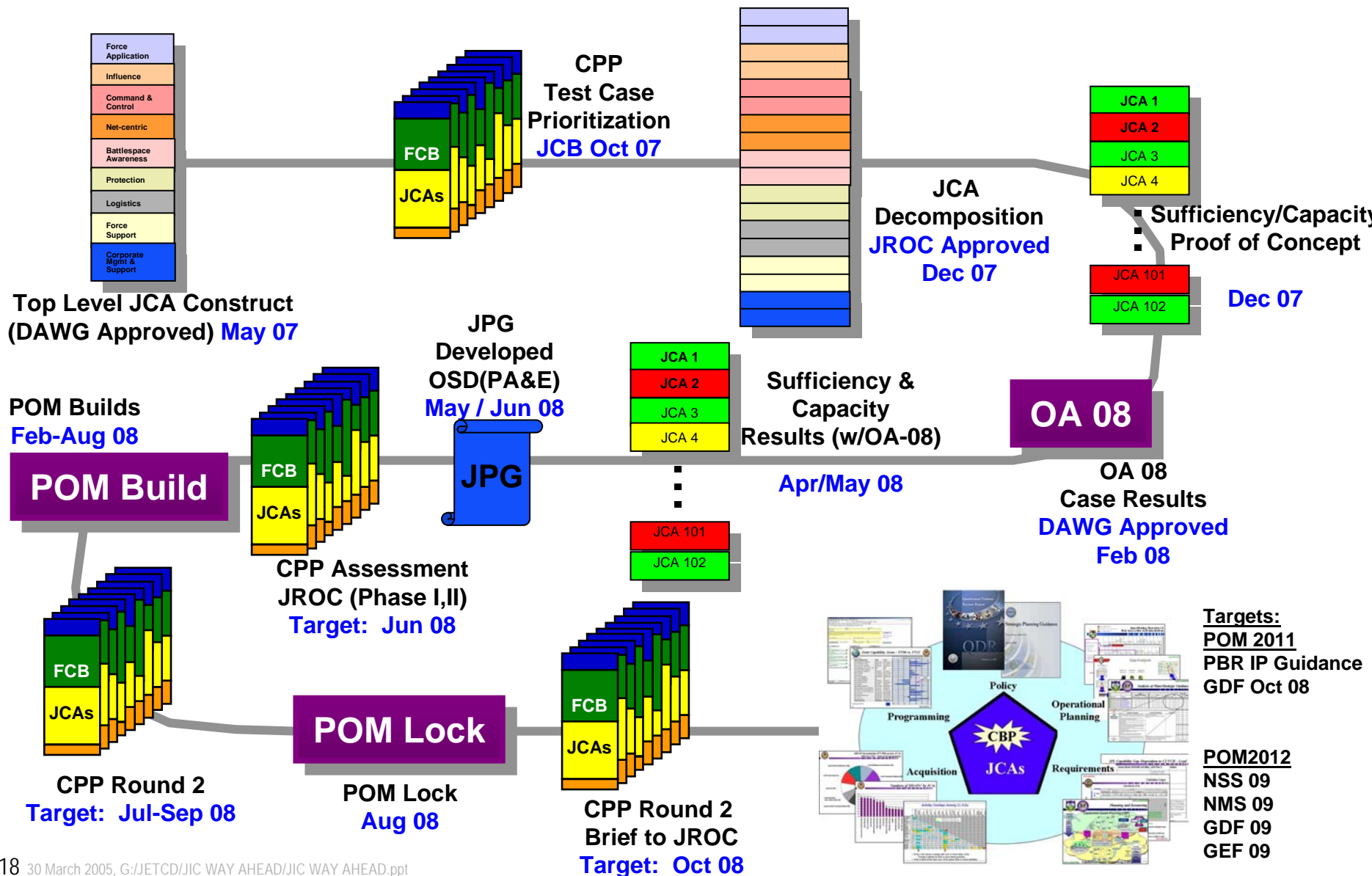
**FYDP+ (7+ years: Projected Future Force)**

JCA Tier 1 JCA		
<b>Joint Battlespace Awareness</b>		
Collection		
Neutral Exploitation	x	
Exploitation Analysis	x	
Modeling, Simulation, and Forecasting	x	
Knowledge Management	x	
<b>Joint Information Operations</b>		
OPSEC	x	
Computer Network Ops (CND, CNA)	x	
PSYOP	x	
Military Deception	x	
Electronic Warfare	x	
Information Operations	x	
<b>Joint Strategic Deterrence</b>		
Overseas Presence	x	
Force Projection	x	
Global Strike	x	
<b>Joint Maritime/Littoral Control Operations</b>		
Surface Warfare		Shortfall
Undersea Warfare	x	
Maritime Interdiction Operations	x	
<b>Joint Air Control Operations</b>		
OCA		
DCA	x	

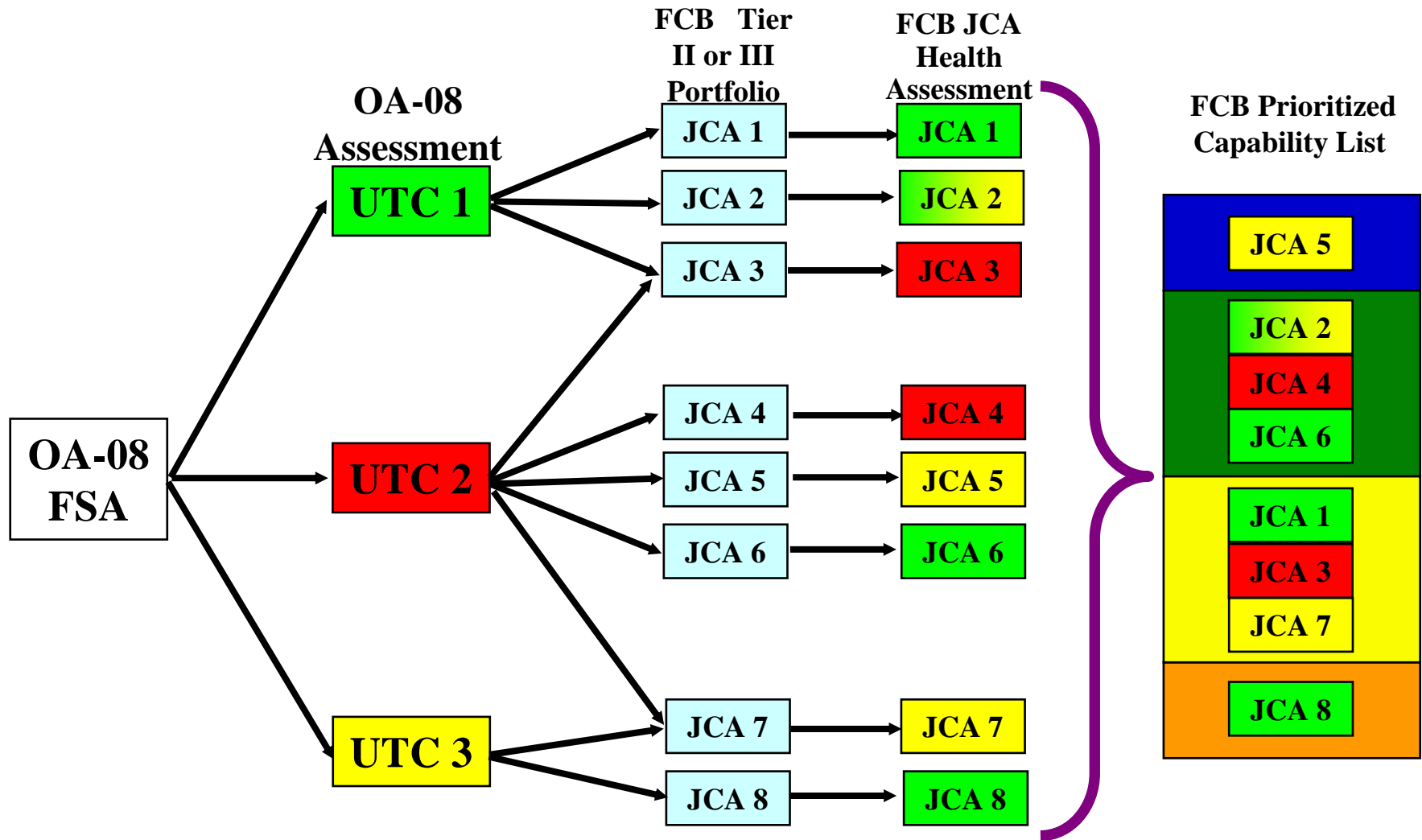
JCA Tier 1 JCA		
<b>Joint Battlespace Awareness</b>		
Collection		
Neutral Exploitation	x	
Exploitation Analysis	x	
Modeling, Simulation, and Forecasting	x	
Knowledge Management	x	
<b>Joint Information Operations</b>		
OPSEC	x	
Computer Network Ops (CND, CNA)	x	
PSYOP	x	
Military Deception	x	
Electronic Warfare	x	
Information Operations	x	
<b>Joint Strategic Deterrence</b>		
Overseas Presence	x	
Force Projection	x	
Global Strike	x	
<b>Joint Maritime/Littoral Control Operations</b>		
Surface Warfare		Sufficiency
Undersea Warfare		
Maritime Interdiction Operations	x	
<b>Joint Air Control Operations</b>		
OCA		
DCA	x	

**Undersea Warfare Assessments**

# Capability Prioritization Path



# Sufficiency and Capacity Simplistic View



*Overlap in UTCs and JCAs makes this process significantly more difficult*

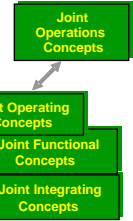


# Joint Capability Development Process

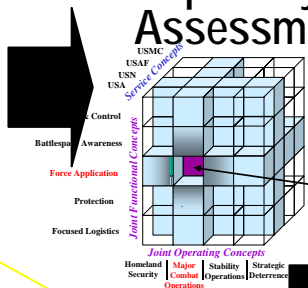
Policy

Concepts

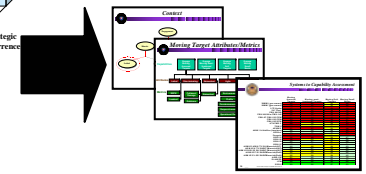
Strategic Planning Guidance/  
National Military Strategy



Capability Assessment



Functional Area  
Functional Needs  
Functional Solution

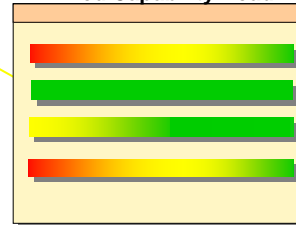


Provide Operational Capability with fielded Systems to meet Warfighter requirements

assesses potential programmed capabilities in a warfighting operational context

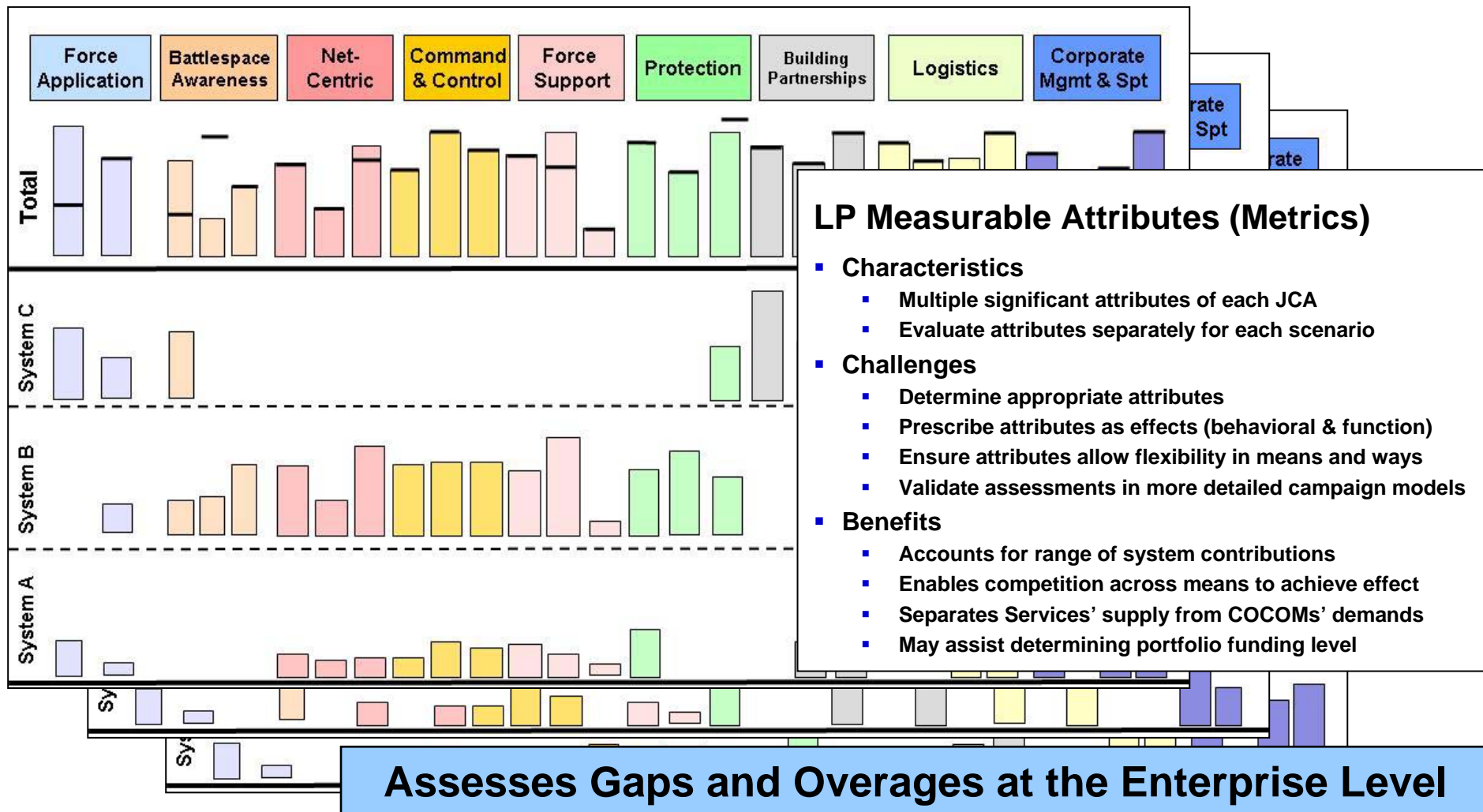
Process that decomposes from policy guidance to warfighting concepts to Joint Capability Areas, to fielded material and non-material solutions

ATL Led Capability Road Map



# Proposed LP Approach

- For each major system, determine capability contribution to each JCA by scenario (1-n)
- Assess total capability contribution (supply) against OPLAN (demand) by scenario



# Illustration of the Preemptive Goal Programming Solution Space – Robust Solution across Capabilities

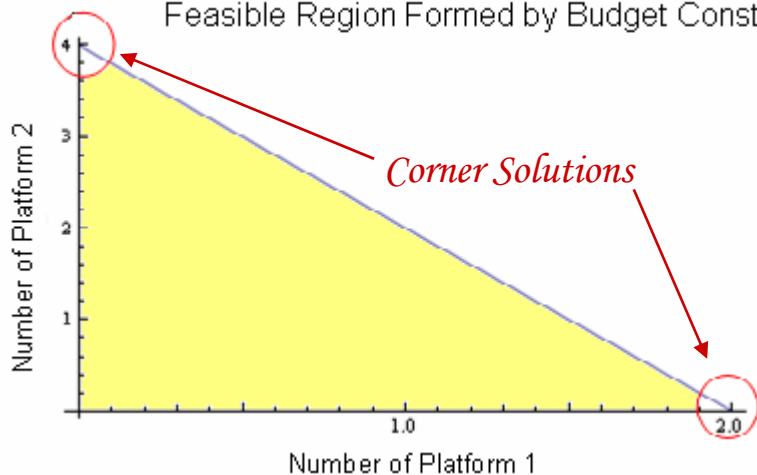
Problem Data:

		Rate of Contribution to Capability		
		C1	C2	C3
System	Platform 1	10	0	20
	Platform 2	10	5	0

Priority	Goal
1st	C2 $\geq$ 10
2nd	C1 $\geq$ 20
3rd	C3 $\geq$ 20
4th	C1 $\geq$ 30

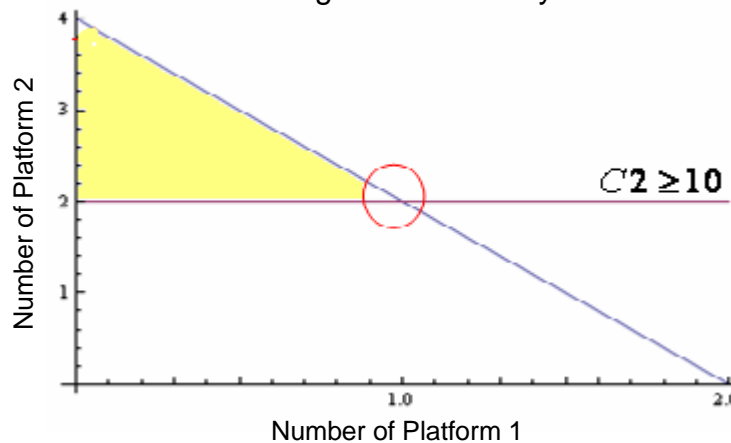
## Weighted Goal Program

Feasible Region Formed by Budget Constraint



## Preemptive Goal Program

Feasible Region Reduced by First Goal



Weighted Goal Program: Table of Corner Solutions						
		Systems		Capability Levels		
		Platform 1	Platform 2	C1	C2	C3
Solutions	S1	2	0	20	0	40
	S2	0	4	40	15	0

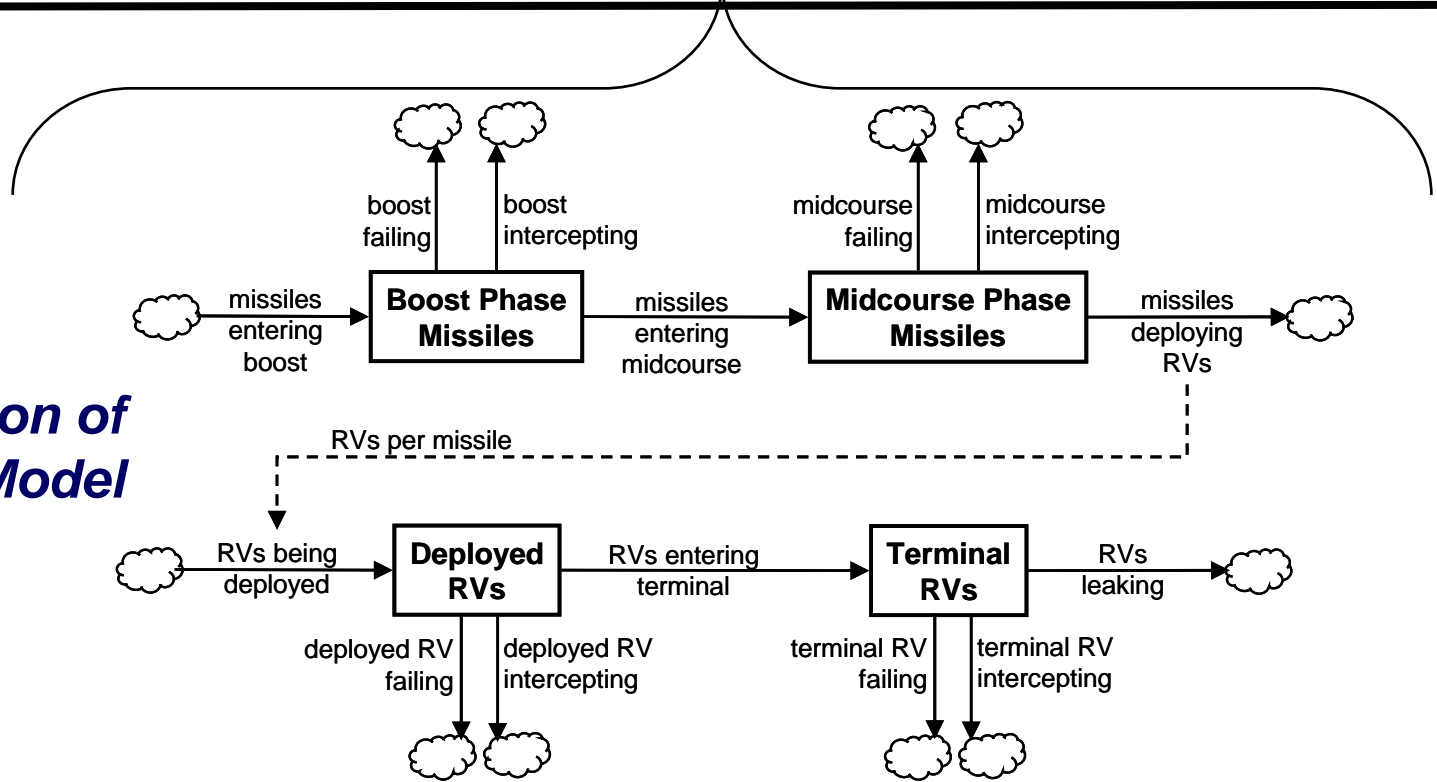
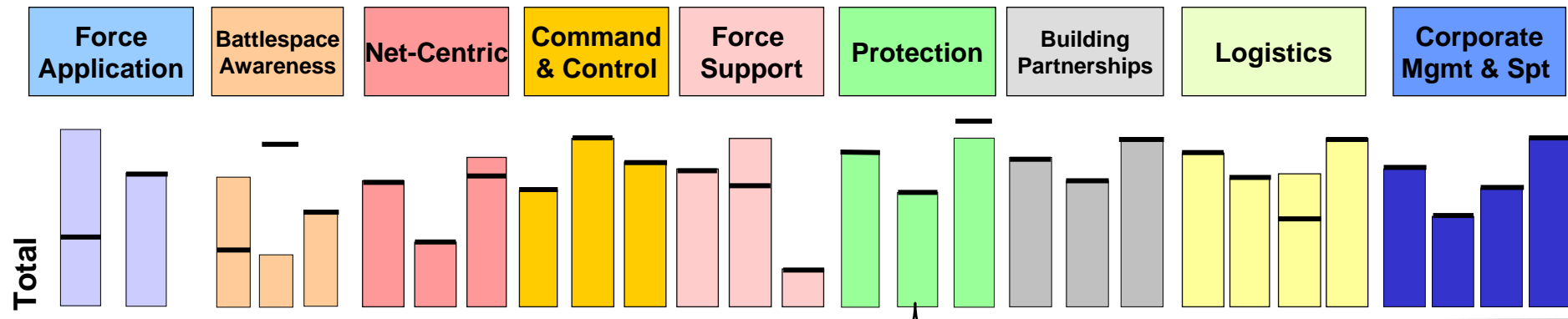
Preemptive Goal Program: Solution from Addition of Goal Constraint						
		Systems		Capability Levels		
		Platform 1	Platform 2	C1	C2	C3
Solution	S3	1	2	30	10	20

Note: Each solution has **best** and **worst** capability values.

Note: The new solution meets all the goals with **good**, not **best**, values across the goals.

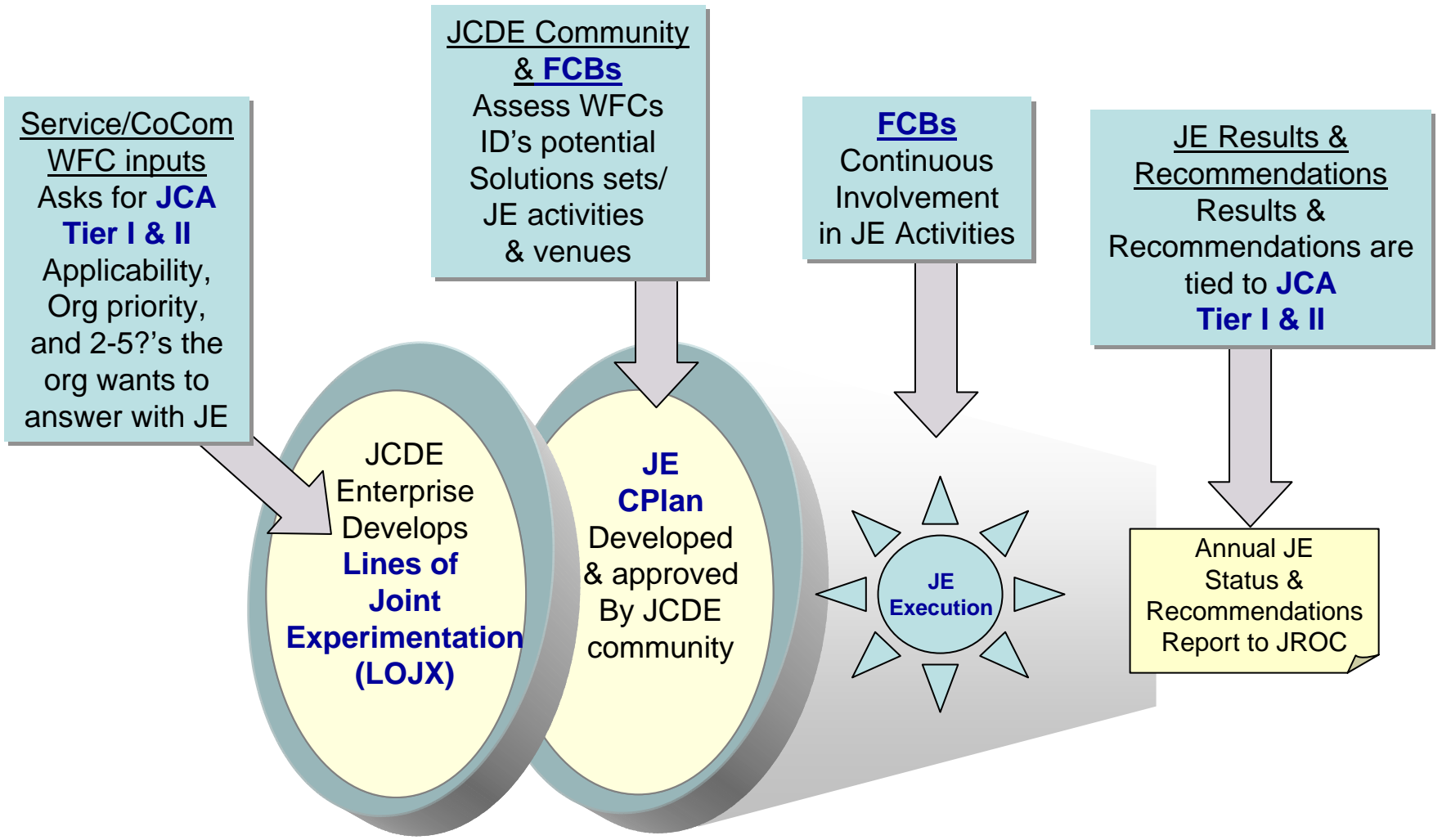
# System Capability Contribution to JCAs

## Scenario 1



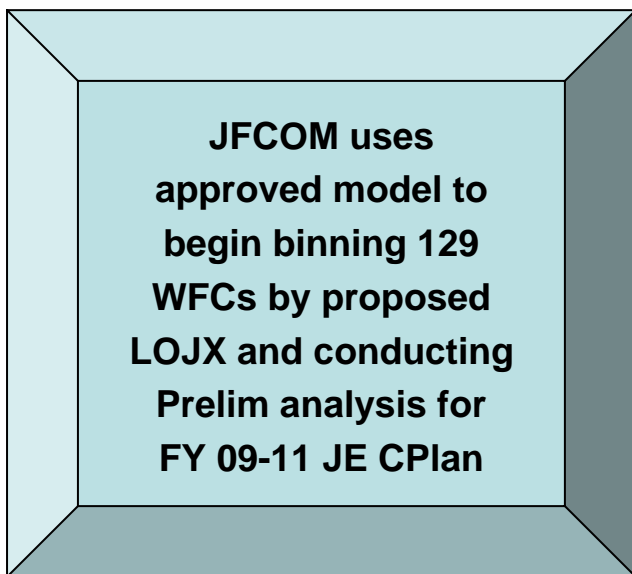
**Sample Portion of STRATCOM Model**

# JCAs / JE Integration



# *Recommended Lines of Joint Experimentation (LOJX)*

*by JCDE Community*



Command and Control  
Net-Centric  
Force Application  
Battlespace Awareness  
Force Projection  
Logistics  
Protection  
Building Partnerships  
Homeland Defense  
Combating WMD  
Irregular Warfare  
Cyberspace Operations

- 6 Dec: JROC
- 13 Dec: JROC Executive Session
- 15 Jan: DAWG
- Post DAWG Actions
  - Support DJS & PDUSD(P) in developing Departmental JCA implementation plan
  - Follow-on refinement; directed by flag level steering group, and approved by DJS & PDUSD(P)
  - Deploy JCA Management System (JCAMS)
    - Web-base authoritative JCA database
    - Rebaselined JCAs mapped to initial 21 tier 1 & 240 tier 2 JCAs
  - Update JCA linkages
    - UJTLs
    - PEs
    - MDAPs



# *Questions?*




# SecDef JCA Memo

“Although I recognize this lexicon needs further development, I encourage you to begin using the Joint Capability Areas where appropriate. The attached action items address specific taskers.”

- Incorporate the JCAs where appropriate across acquisition activities including the DAB, capability roadmaps, and technology investment decision opportunities
- Incorporate the JCAs as appropriate into future Defense Planning Scenarios (DPSs) and Strategic Planning Guidance (SPG)
- Refine Tier 2 layer of capabilities lexicon as required to provide sufficient detail to enhance usefulness
- Use the capabilities lexicon in the continued evolution of the Joint Capabilities Integration Development System (JCIDS) where appropriate
- Integrate the capabilities lexicon into the future Universal Joint Task List (UJTL)
- Incorporate the JCA into evolving Global Force Management (GFM) and Joint Force Provider (JFP) initiatives where appropriate

JCS



THE SECRETARY OF DEFENSE  
WASHINGTON, DC 20301-1000

MAY 6 2005

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARY OF DEFENSE FOR ACQUISITION,  
TECHNOLOGY AND LOGISTICS  
UNDER SECRETARY OF DEFENSE FOR POLICY  
COMMANDERS OF THE COMBATANT COMMANDS  
DIRECTOR PROGRAM ANALYSIS AND EVALUATION


SUBJECT: Operational Availability (OA)-05 / Joint Capability Areas

Thank you for your participation in the Joint Force Capabilities Assessment sub-study under Operational Availability-05. Your input and comments during the study clearly enhanced the outcome of this important effort.

As an integral part of the evolving Capabilities-Based Planning process, and in response to guidance in the Strategic Planning Guidance, the study developed 21 Joint Capability Areas representing the beginnings of a common language to discuss and describe capabilities across many related Department activities and processes.

Although I recognize this lexicon needs further development, I encourage you to begin using the Joint Capability Areas where appropriate. The attached action items address specific taskers. A copy of the briefing is included for your information.

Attachments:  
As stated



OSD 05820-05

UNCLASSIFIED//FOR OFFICIAL USE ONLY

JOINT REQUIREMENTS  
OVERSIGHT COUNCILTHE JOINT STAFF  
WASHINGTON, D.C. 20318-8000JROCM 182-07  
23 July 2007

## MEMORANDUM FOR DISTRIBUTION

Subject: Joint Capability Area Baseline Reassessment

1. The Joint Requirements Oversight Council (JROC) approved a functional restructuring of the Joint Capability Areas. The following nine top level Joint Capability Areas were approved: Force Application, Influence, Command and Control, Net-Centric, Battlespace Awareness, Protection, Logistics, Force Support, and Corporate Management and Support.
2. The JROC requests assistance from addressees in providing the necessary manpower and analytical support to ensure key objectives are achieved.

E. P. GIAMBASTIANI  
Admiral, US Navy  
Vice Chairman  
of the Joint Chiefs of Staff

## DISTRIBUTION:

Under Secretary of Defense (Acquisition, Technology and  
Under Secretary of Defense (Intelligence)  
Under Secretary of Defense (Personnel and Readiness)  
Under Secretary of Defense (Policy)  
Commander, US Central Command  
Commander, US European Command  
Commander, US Joint Forces Command  
Commander, US Northern Command  
Commander, US Pacific Command  
Commander, US Southern Command  
Commander, US Special Operations Command  
Commander, US Strategic Command  
Commander, US Transportation Command  
Vice Chief of Staff, US Army  
Vice Chief of Naval Operations  
Vice Chief of Staff, US Air Force

UNCLASSIFIED//FOR OFFICIAL USE ONLY

Subject: Joint Capability Area Baseline Reassessment

1. The Joint Requirements Oversight Council (JROC) approved a functional restructuring of the Joint Capability Areas. The following nine top level Joint Capability Areas were approved: Force Application, Influence, Command and Control, Net-Centric, Battlespace Awareness, Protection, Logistics, Force Support, and Corporate Management and Support.
2. The JROC requests assistance from addressees in providing the necessary manpower and analytical support to ensure key objectives are achieved.

E. P. GIAMBASTIANI  
Admiral, US Navy  
Vice Chairman  
of the Joint Chiefs of Staff

# Background Study Guidance



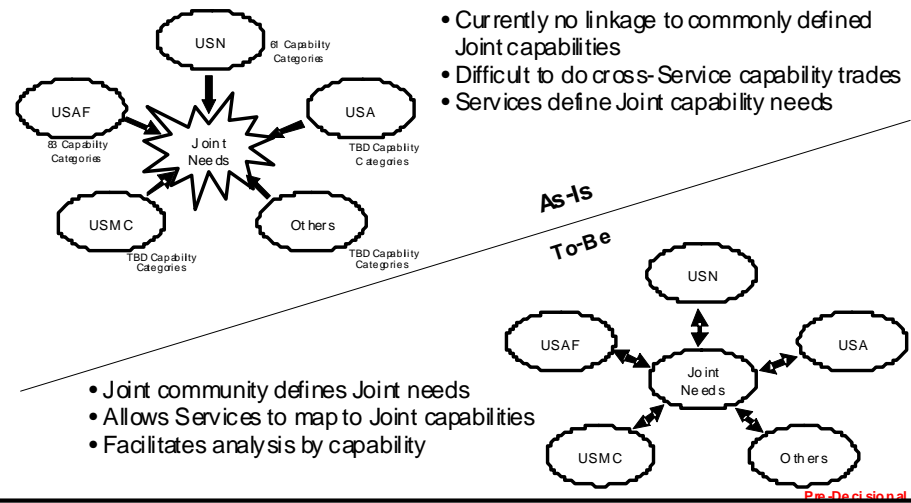
## The Problem Today

If you want to answer...


• What? How Much? When? Then...

At the Department level, you need to:

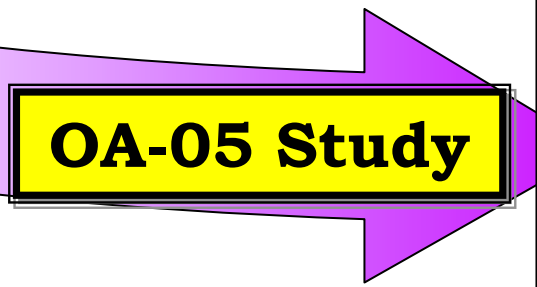
- Elevate the discussion above the platform and "single solution" level
- Communicate consistently, with a shared vision and common language
- Have a single set of facts and assumptions to guide analysis and decisions



**Joint Defense Capabilities Study ("The Aldridge Study") – Jan 04**



**FY 06-11 Strategic Planning Guidance (Mar 04)**

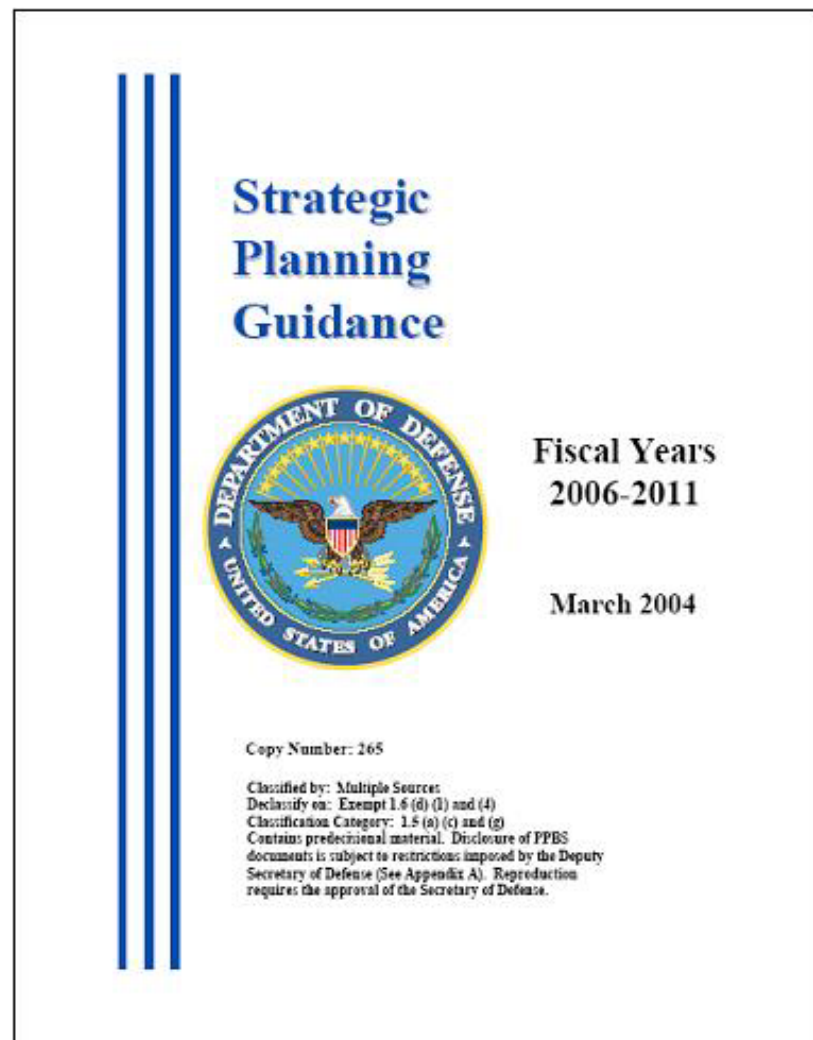


**OA-05 Study**

**Joint Force Capabilities Assessment (JFCA) Sub-Study language: "identify, organize and prioritize capabilities required for the Defense Strategy." (S: 30 Jan 05)**

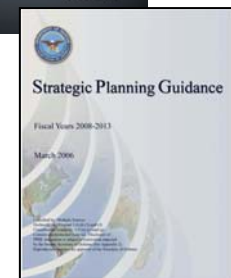
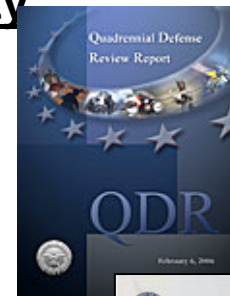
- Reach a common definition of “capability” and associated terms
- Identify capability categories (functional and operational)
- Develop a hierarchy of capability categories that support:
  - Cross Service trades
  - Strategy guidance articulation
  - Inclusion of operational and support capabilities
  - Gap analyses and evaluation of program contributions to the capability
  - Assessment of program execution
- Develop a compatible planning and programming framework
- Foster a “capabilities culture” that considers divestiture in tandem with initiatives; integrates risk; considers near and far term needs; is fiscally responsible

**(U) Joint Force Capabilities Assessment.** Taking into account the modular forces and capability equivalency substitution framework tasked later in this document (see Section IV, Global Force Management), the OA 05 study will identify, organize, and prioritize capabilities required for the Defense Strategy. The identification of joint force requirements will be based on both warfighting analyses and rotational methodologies.



# Recent Strategic Direction - 2006 QDR & SPG

- Reaffirms Department's shift from Threat-Based Planning to Capabilities-Based Planning
- Links JCAs specifically to joint capability portfolio concept
- Emphasizes the need to manage the Department via joint capability portfolios to meet President & Combatant Commanders' needs
  - Initial effort includes 3 JCAs  
(*Joint C2, Joint Net Centric Operations, Joint Space Operations*\*)
  - Plans to expand to other JCAs
- Lauds PACOM's efforts (Linking Plans to Resources (LPTR)) to map resource needs to plans and operations
  - Working to expand program to enable Department-wide assessment of JCAs

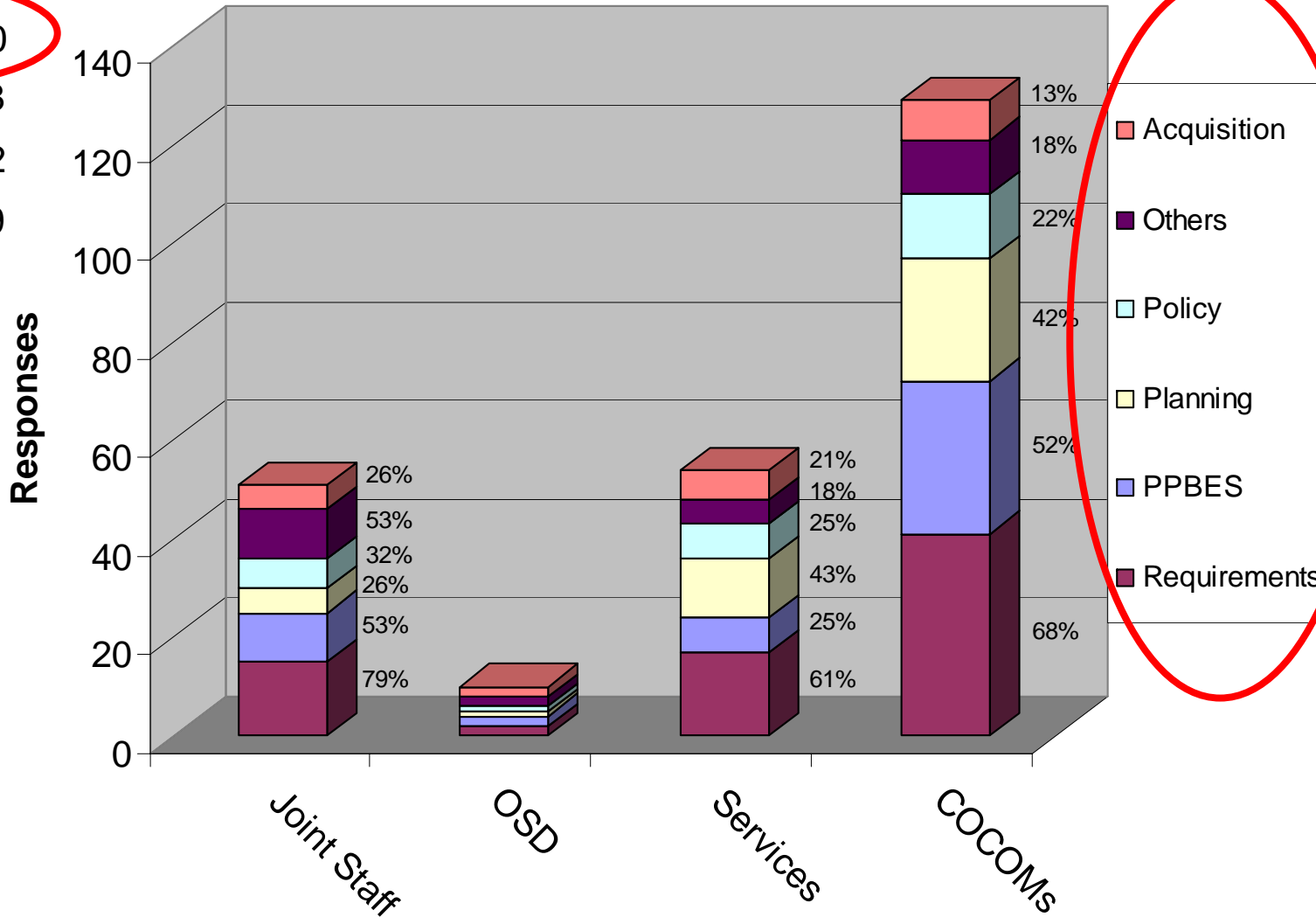


\* DAWG deleted Space Operations; added Battlespace Awareness & Joint Logistics

## (Survey Question #1) Organizational Activity

- 130 respondents of which 109 use JCAs

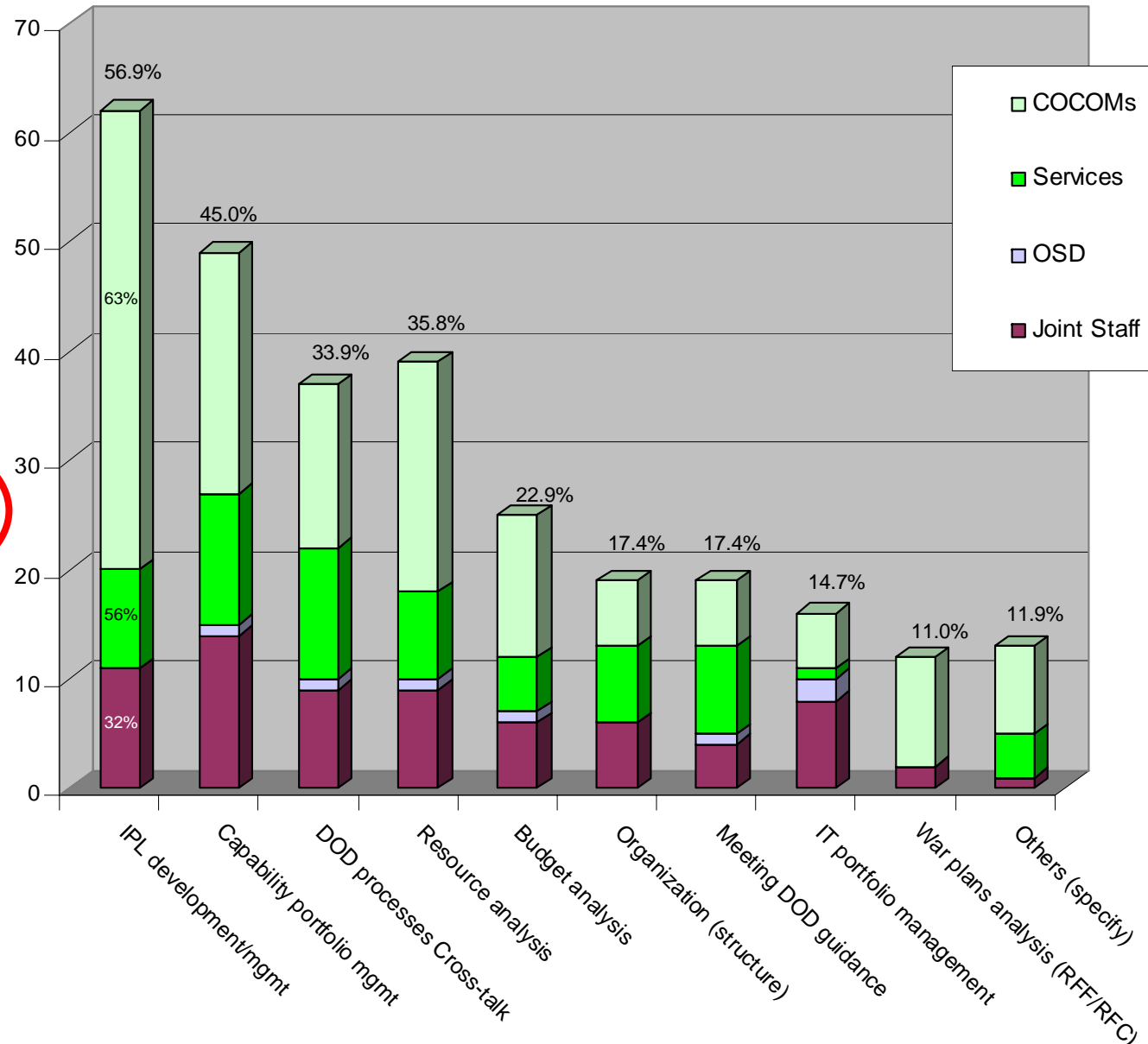
- COCOMs – 60
- Services – 28
- OSD – 2
- Joint Staff – 19



## (Survey Question # 2 / 2a)

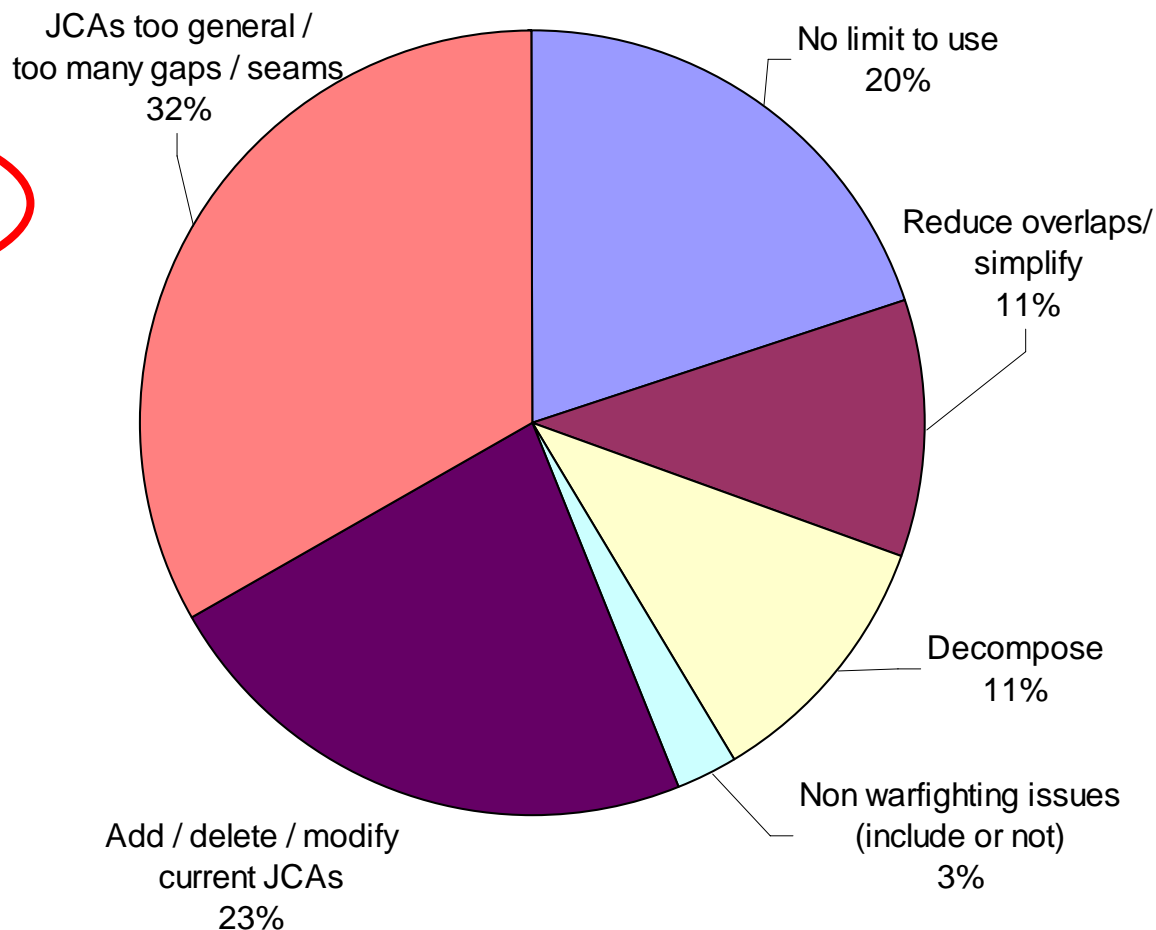
### How an organization benefits from and uses JCAs

- JCAs being used across all activities
- Cross-talk between activities beginning
- Preponderance of use seems to be in requirements and portfolio management
- Use is based on utility rather than DoD directive



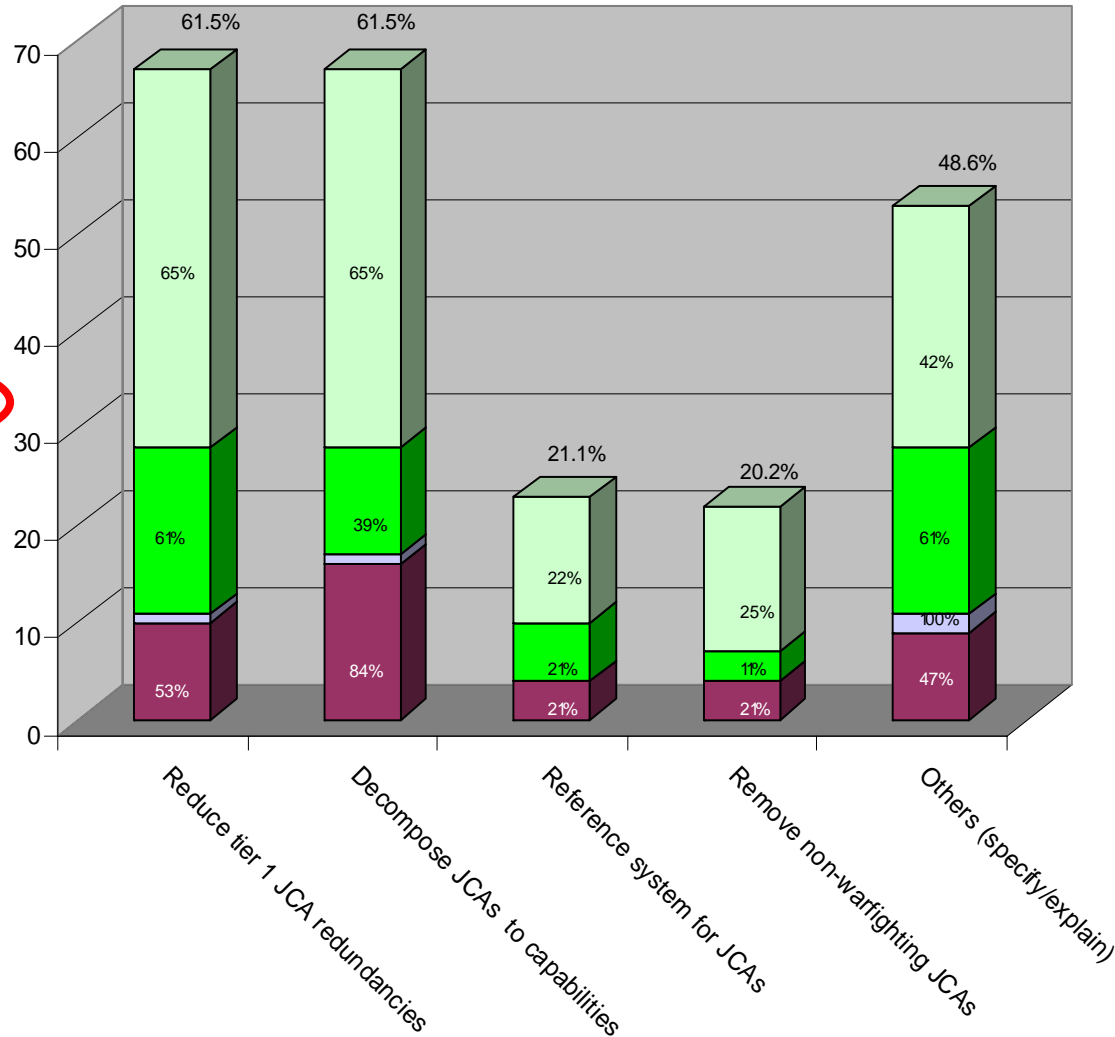
## Written comments discussing how JCAs have limited an organizations use and suggestions for improvement (Survey Question #2b)

- 75 survey respondents had written comments
- 43% of respondents indicate JCAs need additional detail (*too general + decompose*)
- Reduce overlap and decompose comments mirror check blocks
- No common theme for “add / delete / modify”. All address individual “issues of the day”
  - Combating WMD
  - IED Defeat
  - Force Readiness
  - Homeland Defense binning



## (Survey Question #3)

### Key areas for improving JCAs



- Overwhelming response for reducing overlap and improving level of detail

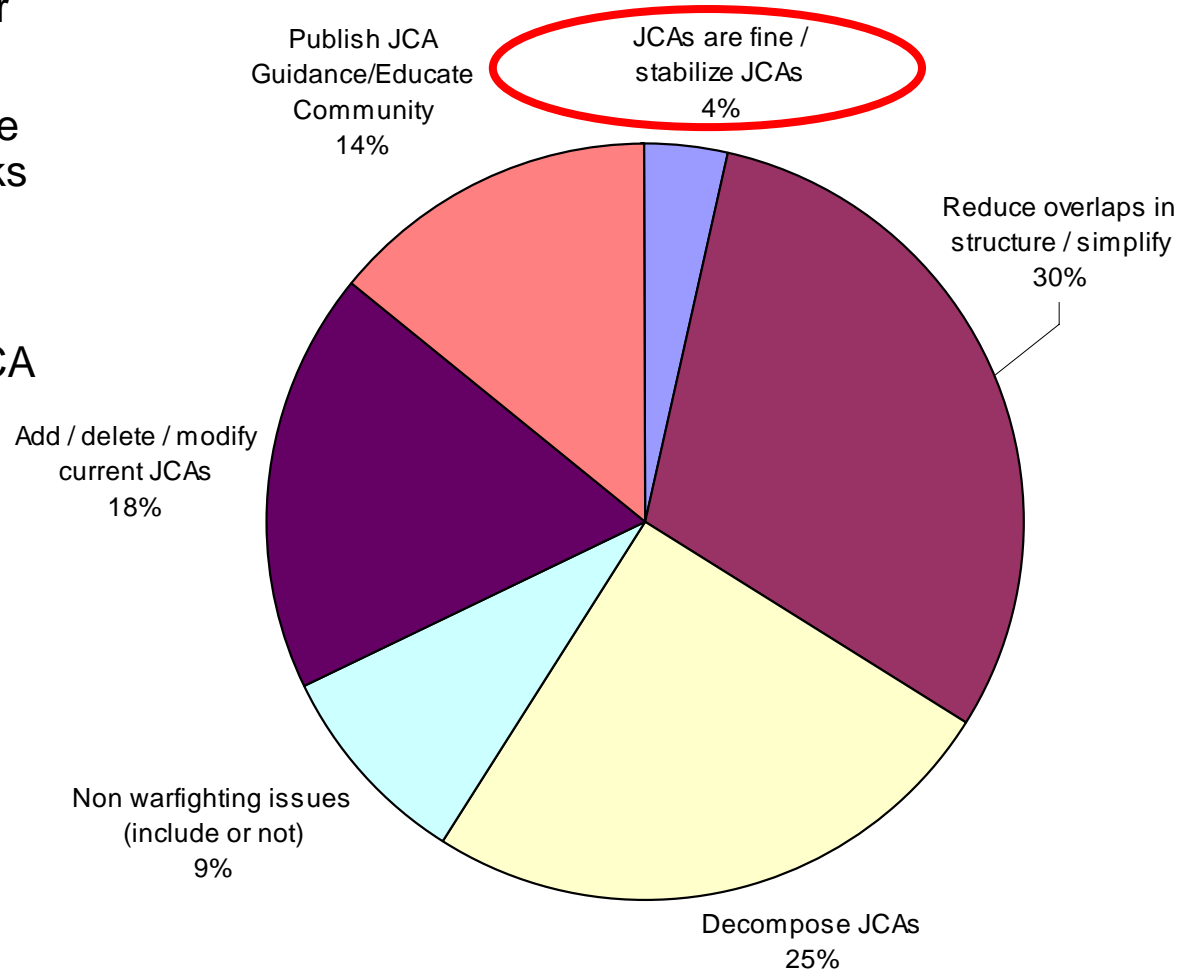
- 61% say reduce overlap

- 61% say decompose further

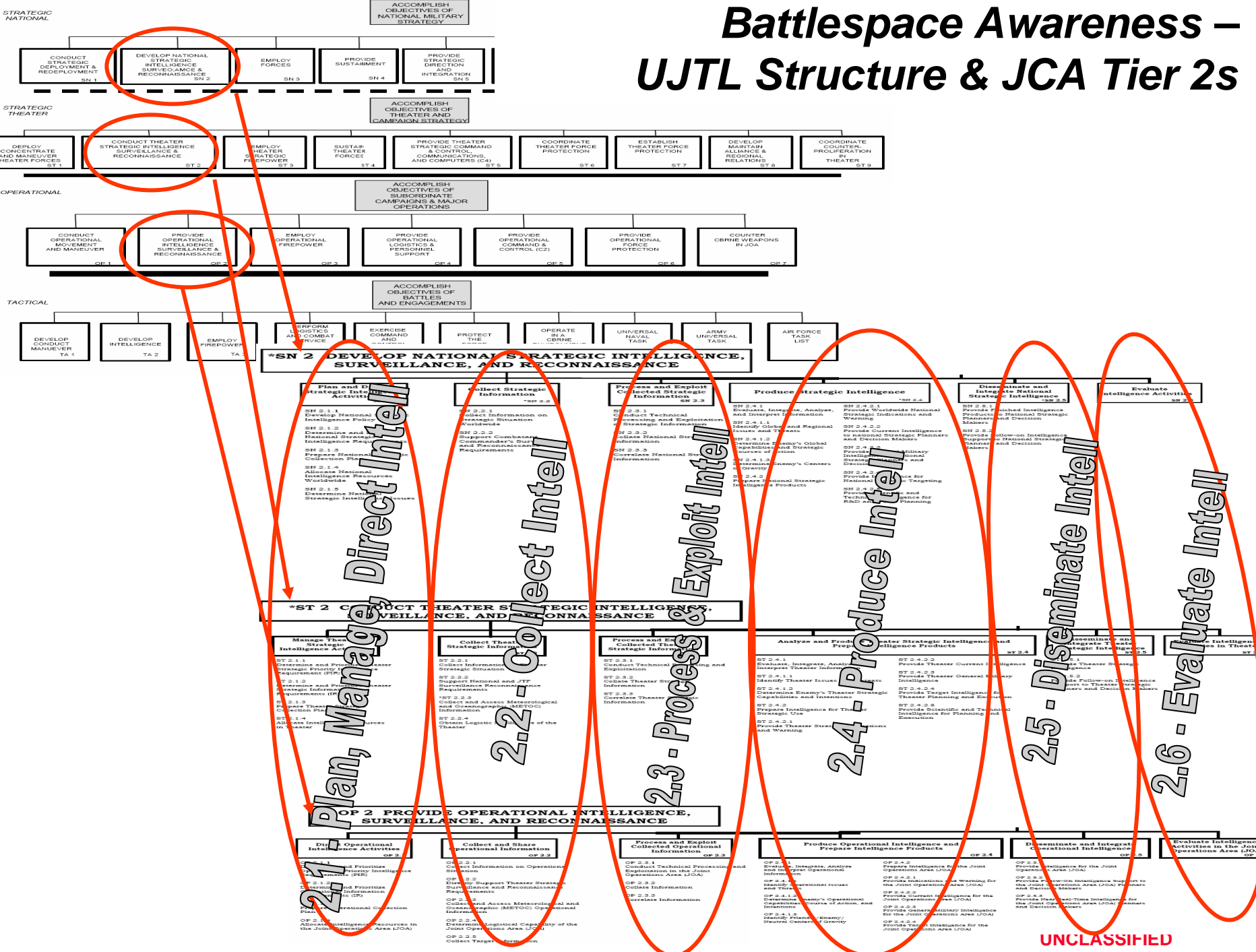
- Majority of responses in "Other" amplify first two responses (see next chart)

## Written comments suggesting improvements to the JCA Framework (Survey Question #3)

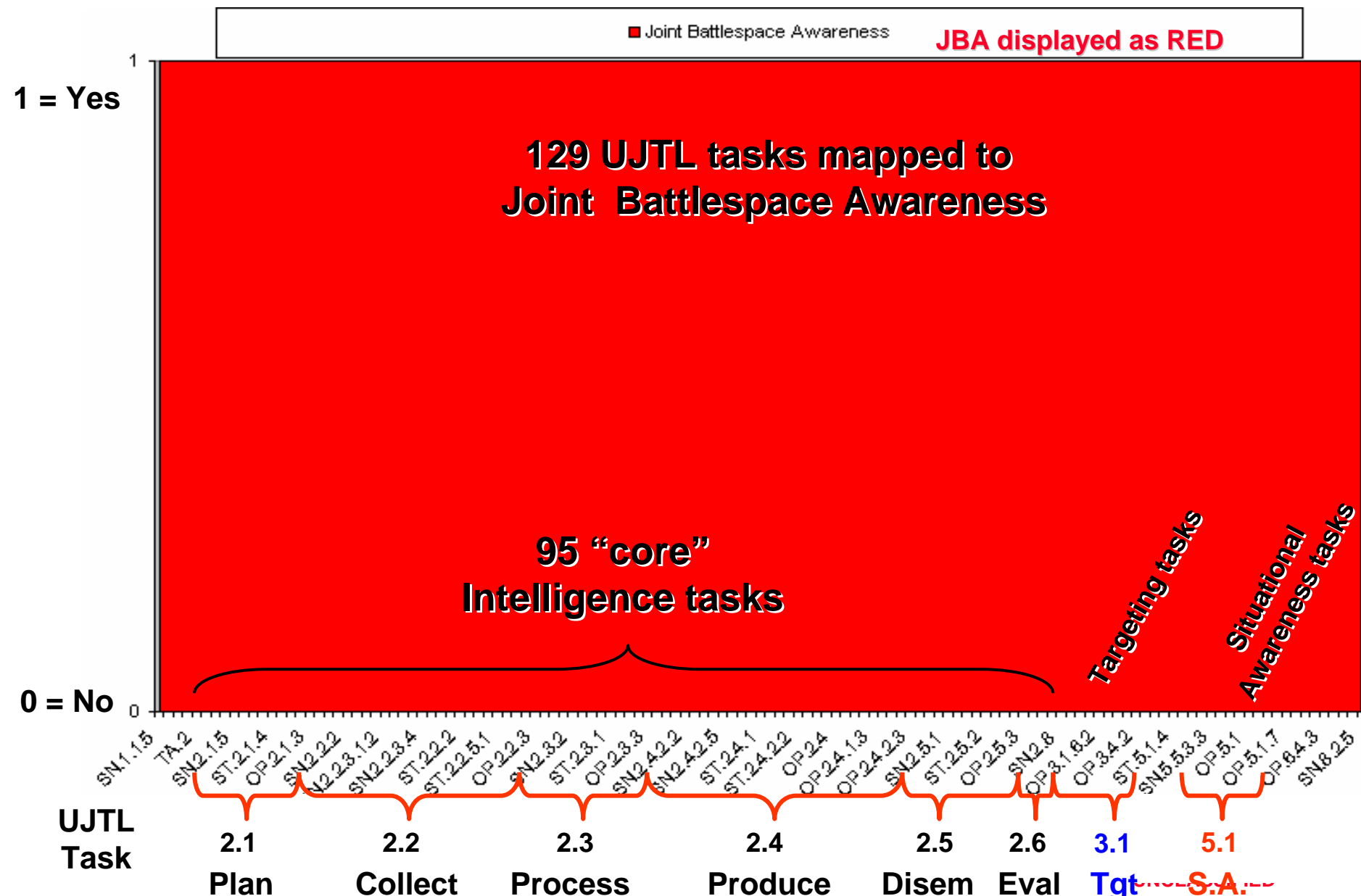
- 56 survey respondents had written “*specify / explain*” comments for question 3
- Reduce overlap and decompose comments mirror in check blocks
- Identifies a need for a guidance and educational effort
- Comments regarding adding JCA were “issues of the day” type

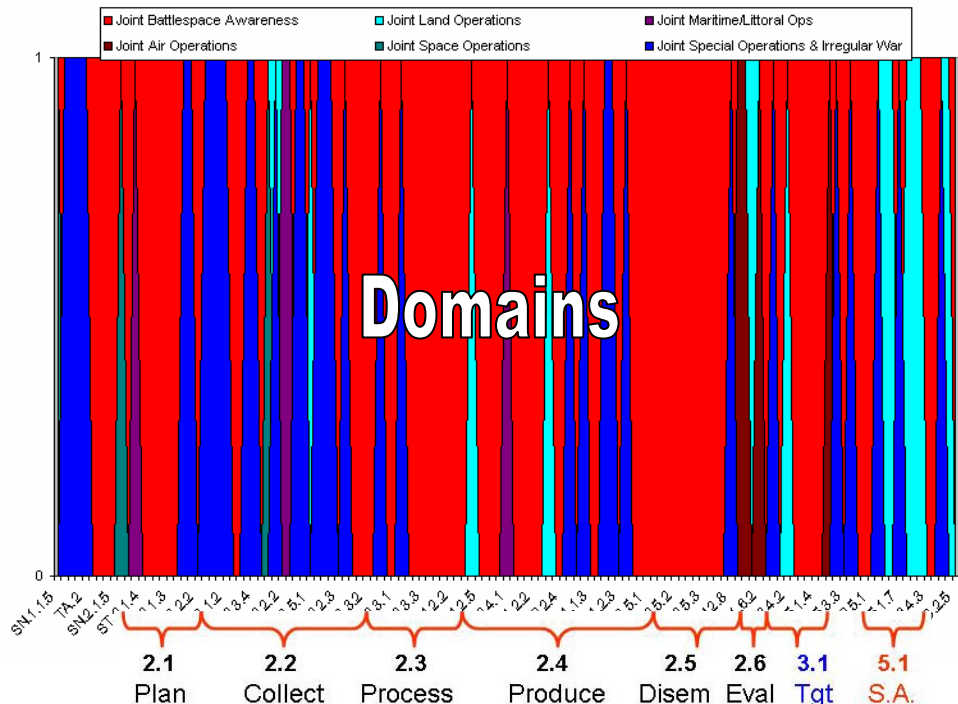
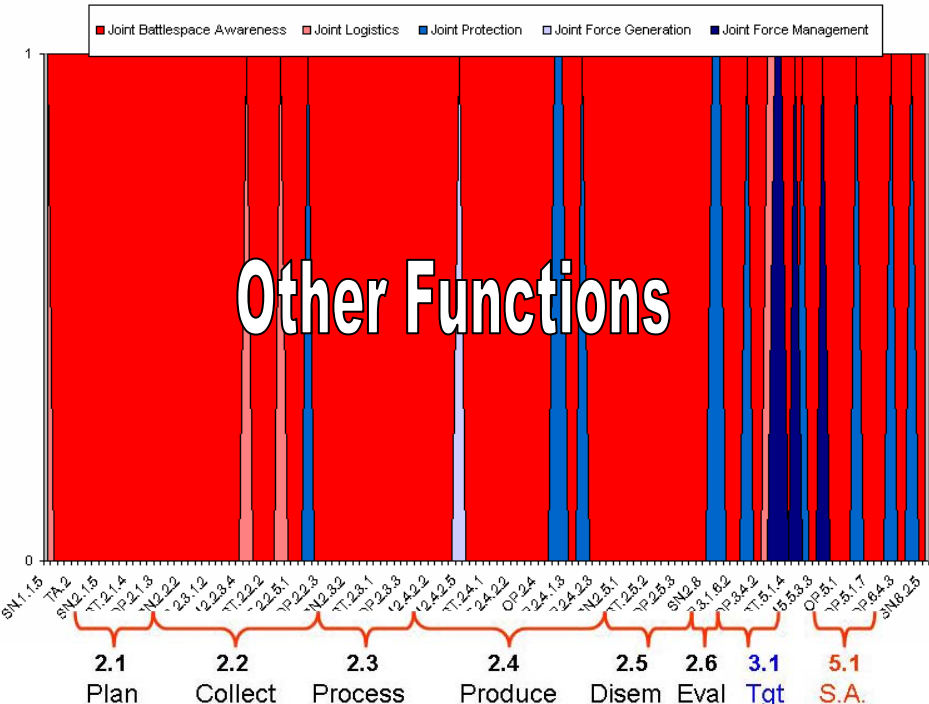
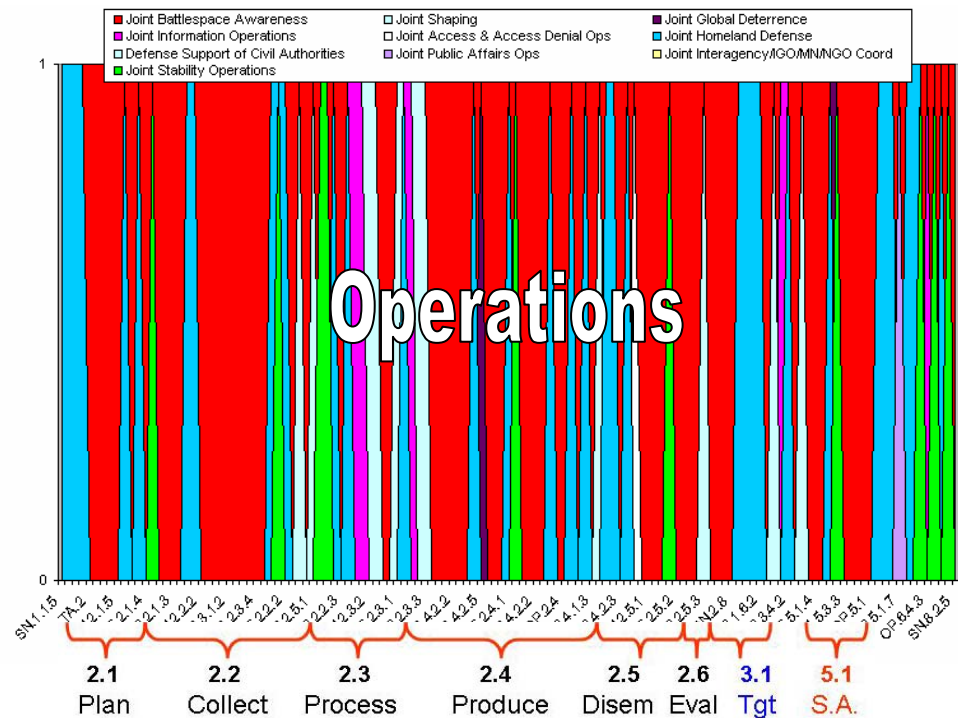
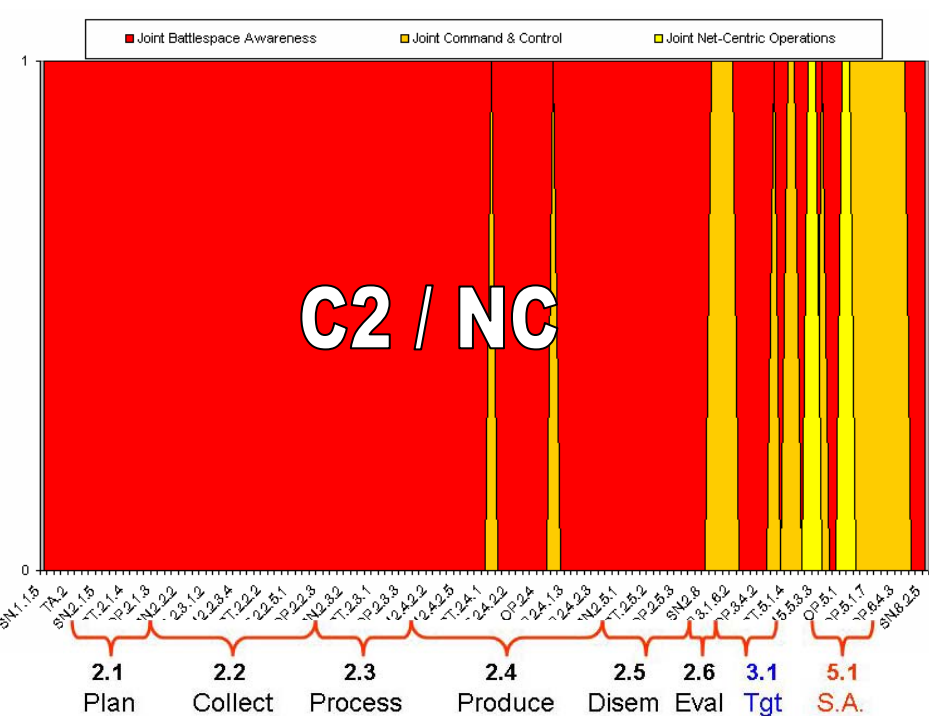


# Battlespace Awareness – UJTL Structure & JCA Tier 2s

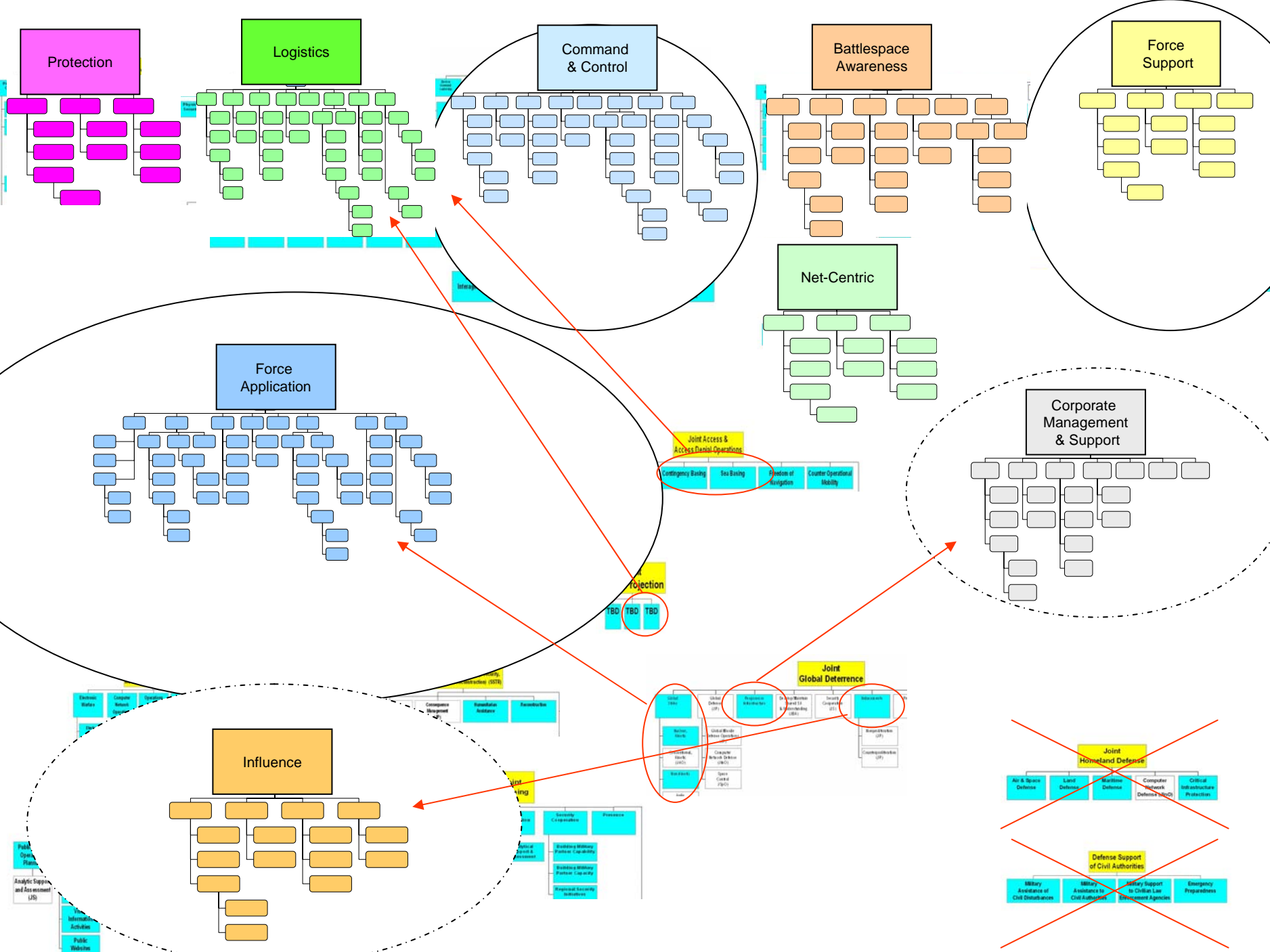


# Visualizing the Overlap









**Force Application**

Conduct Op Movement and Maneuver	<i>Joint Land Ops</i>
Provide and Employ Joint Fires	
Conduct Decisive Maneuver	
Control Territory, Populations & Resources	
Conduct Detainee Operations	
Conduct Refugee Operations	
Manage Internally Displaced Personnel	
Manage Enemy Prisoners of War	
Surface Warfare	<i>Maritime /Littoral Ops</i>
Offensive Surface Warfare	
Defensive Surface Warfare	
Undersea Warfare	
Antisubmarine Warfare	
Subsurface Warfare	
Mine Warfare	
Mine Countermeasures (MCM)	
Mining	
Maritime Interdiction	
Sea lines Of Communication Disruption	
Maritime Interception Operations	
Maritime/Littoral Expeditionary ops	
Amphibious Force Operations	
Riverine Operations	
Advance Force Operations	
Maritime/Littoral Fires	
Naval Fire Support	
Ocean/Hydro/River Survey & Spt Ops	
Space Control	<i>Joint Space Operations</i>
Space Force Application	
Offensive Counterair Ops	<i>Joint Air Operations</i>
SEAD	
Offensive Counterair Sweep	
Escort	
Offensive Counterair Attack Operations	
Strategic Attack	
Conventional, Kinetic Attack	
Air Interdiction	
Tactical Air Support	
Close Air Support	
Assault Support Operations	
Special Operations	<i>Joint Special Ops &amp; Irre</i>
Special Recon	

# Force Application

# Force Application

## Engagement

### Kinetic fires

#### Fixed Target

- Above surface
- Surface
- Sub-surface
- Cyber

#### Mobile Targets

- Above surface
- Surface
- Sub-surface
- Cyber

### Non-kinetic fires

#### Fixed Target

- Above surface
- Surface
- Sub-surface
- Cyber

#### Mobile Targets

- Above surface
- Surface
- Sub-surface
- Cyber

## Maneuver

### Mobility

- Above surface
- Surface
- Space
- Land
- Maritime
- Sub-surface
- Tunnel
- Maritime
- Cyber

### Counter-Mobility

- Surface
- Land
- Maritime

Conduct On Movement and Maneuver

Provide and Employ Joint Fires

Conduct Decisive Maneuver

Control Territory, Populations & Resources

Conduct Detainee Operations

Conduct Refugee Operations

Manage Internally Displaced Personnel

Manage Enemy Prisoners of War

Surface Warfare

Offensive Surface Warfare

Defensive Surface Warfare

Undersea Warfare

Antisubmarine Warfare

Subsurface Warfare

Mine Warfare

Mine Countermeasures (MCM)

Mining

Maritime Interdiction

Sea lines Of Communication Disruption

Maritime Interception Operations

Maritime/Littoral Expeditionary ops

Amphibious Force Operations

Riverine Operations

Advance Force Operations

Maritime/Littoral Fires

Naval Fire Support

Ocean/Hydro/River Survey & Spt Ops

Space Control

Space Force Application

Offensive Counterair Ops

SEAD

Offensive Counterair Sweep

Escort

Offensive Counterair Attack Operations

Strategic Attack

Conventional, Kinetic Attack

Air Interdiction

Tactical Air Support

Close Air Support

Assault Support Operations

Special Operations

Special Recon

*Joint Land Ops*

*Maritime/Littoral Ops*

*Joint Space Operations*

*Joint Air Operations*

*Joint Special Ops & Irregular Ops*

Functional Joint Capabilities

# *Experience and Analysis on JCA Use*

- **Senior Leaders**

- Too complex; fewer is better
- Reduce overlap; endorsed way ahead

- **COCOMs**

- Eliminate redundancy
- Align functionally
- Decompose to support planning & IPL development; need more granularity to express needs
- Eliminate disconnects between COCOM and JS binning
- Too many non-warfighting capabilities fall outside JCAs

- **OSD / AT&L**

- MMT indicates overlaps in over 60% of JCAs
- Reducing overlaps would increase use/effectiveness

- **OSD / PA&E**

- Any framework can be used; needs stability

- **JS**

- Overlaps create ambiguity when binning gaps
- Meaningful work will occur at Tier III
- Many capabilities do not fall neatly within current JCAs

- **Services**

- Eliminate redundancy
- Decompose to support refined planning & requirements development

- **Planners**

- Decompose to support planning (Strategy to task)
- Stabilize the framework

*“...Grab bag of capabilities, missions and functions defined by analytic and bureaucratic imperatives.”*

# Activity Overlaps Among Original JCA Tier1

	Count	Defense Support of Civil Authorities	Joint Access & Access Denial Operations	Joint Air Operations	Joint Battlespace Awareness	Joint Command & Control	Joint Force Generation	Joint Force Management	Joint Global Deterrence	Joint Homeland Defense	Joint Information Operations	Joint Interagency / IGO / NGO Coordination	Joint Land Operations	Joint Logistics	Joint Maritime/Littoral Operations	Joint Net-Centric Operations	Joint Protection	Joint Space Operations	Joint Special Operations & Irregular Operations	Joint Stability Operations	
Defense Support of Civil Authorities	82																				
Joint Access & Access Denial Operations	217	66 30% 80%							50% or more JIAS in common in those two JCAs												
Joint Air Operations	114	33 29% 40%	79 69% 36%						Greater then 70% JIAS in common in those two JCAs												
Joint Battlespace Awareness	136	26 19% 32%	72 53% 52%	59 43% 52%					Greater then 80% JIAS in common in those two JCAs												
Joint Command & Control	138	19 14% 23%	34 25% 16%	42 30% 51%	70 51%																
Joint Force Generation	38	13 34% 16%	25 66% 12%	18 47% 16%	10 26% 7%	13 34%															
Joint Force Management	61	2 3% 2%	3 5% 1%	14 23% 12%	5 8% 4%	57 93% 41%	5 8% 13%														
Joint Global Deterrence	173	55 32% 67%	109 63% 50%	73 42% 64%	103 60% 76%	69 40% 50%	15 9% 39%	22 13% 36%													
Joint Homeland Defense	288	62 22% 76%	173 60% 80%	92 32% 81%	130 45% 96%	106 37% 77%	19 7% 50%	37 13% 61%	169 59% 98%	←											
Joint Information Operations	71	19 27% 23%	53 75% 24%	47 66% 41%	42 59% 31%	18 25% 13%	3 4% 8%	8 11% 13%	43 61% 25%	67 94% 23%											
Joint Interagency / IGO / NGO	18	4 22% 5%	2 11% 1%	2 11% 2%	9 50% 7%	3 17% 2%	5 28% 13%	0 0% 0%	6 33% 3%	17 94% 6%	0 0% 0%										
Joint Land Operations	120	45 38% 55%	101 84% 47%	59 49% 52%	20 17% 15%	29 24% 21%	15 13% 25%	21 18% 55%	43 36% 25%	87 73% 30%	26 22% 37%										
Joint Logistics	132	35 27% 43%	77 58% 35%	29 22% 25%	44 33% 32%	69 52% 50%	26 20% 68%	36 27% 59%	65 49% 38%	72 55% 25%	1 1% 1%	3 2% 17%	44 33% 37%								
Joint Maritime/Littoral	140	45 32% 55%	117 84% 54%	66 47% 58%	28 20% 21%	30 21% 22%	21 15% 55%	15 11% 25%	59 42% 34%	108 77% 38%	28 20% 39%	3 2% 17%	96 69% 80%	46 33% 35%							
Joint Net-Centric Operations	59	5 8% 6%	17 29% 8%	8 14% 7%	25 42% 18%	16 27% 12%	8 14% 21%	0 0% 0%	21 36% 12%	58 98% 20%	9 15% 13%	13 22% 72%	10 17% 8%	8 14% 6%	11 19% 8%						
Joint Protection	43	1 2% 1%	36 84% 17%	4 9% 4%	8 19% 6%	4 9% 3%	1 2% 3%	0 0% 0%	5 12% 3%	42 98% 15%	17 40% 24%	1 2% 6%	27 63% 23%	1 2% 1%	24 56% 17%	21 49% 36%					
Joint Space Operations	14	4 29% 5%	8 57% 4%	4 29% 4%	7 50% 5%	3 21% 2%	0 0% 0%	0 0% 0%	6 43% 3%	10 71% 3%	4 29% 6%	0 0% 0%	3 21% 3%	2 14% 2%	2 14% 1%	0 0% 0%	0 0% 0%				
Joint Special Operations & Irregular Operations	118	35 30% 43%	94 80% 43%	72 61% 63%	43 36% 32%	24 20% 17%	14 12% 37%	11 9% 18%	57 48% 33%	90 76% 31%	40 34% 56%	3 3% 17%	69 58% 58%	28 24% 21%	82 69% 59%	8 7% 14%	19 16% 44%	2 2% 14%			
Joint Stability Operations	180	58 32% 71%	159 88% 73%	57 32% 50%	69 38% 51%	39 22% 28%	21 12% 55%	10 6% 16%	93 52% 54%	139 77% 48%	40 22% 56%	0 0% 0%	81 45% 68%	72 40% 55%	93 52% 66%	9 5% 15%	30 17% 70%	3 2% 21%	85 47% 72%	←	

- Every JCA shows overlap with one or more other JCAs
  - 50% or more shared activities
- Over a third of the time, two JCAs share 50% or more activities

# AT&L JCA Assessment

- Using MMT cross-referencing function, we compared capabilities called out for each Tier 1 JCA
  - Percentage of shared activities reflects relationships among different capability areas

- JCAs are mapped to operational activities
- Activities mapped to the Tier 2 JCAs are rolled up under Tier 1
- This mapping can be used to cross reference activities mapped across the 21 JCA Tier 1

- Count of activities that map to each JCA
- Count of activities that map to both JCAs
- Percentage of activities mapped to Joint Air Operations JCA which are also mapped to Joint Access Denial JCA
- A higher percentage of shared activities indicates a stronger relationship between the JCAs

	Count	Defense Support of Civil Authorities	Joint Access & Access Denial Operations	Joint Air Operations	Joint Battlespace Awareness	Joint Command & Control	Joint Force Generation	Joint Force Management	Joint Global Deterrence
Defense Support of Civil Authorities	82	82							
Joint Access & Access Denial	217	66 (30%)	80 (37%)						
Joint Air Operations	114	33 (29%)	40 (35%)	79 (69%)					
Joint Battlespace Awareness	130	26 (19%)	32 (24%)	72 (53%)	59 (45%)				
Joint Command & Control	138	19 (14%)	23 (16%)	34 (25%)	42 (30%)	42 (30%)			
Joint Force Generation	38	13 (34%)	16 (42%)	25 (66%)	18 (47%)				
Joint Force Management	61	2 (3%)	2 (3%)	3 (5%)	14 (23%)				
Joint Global Deterrence	173	55 (32%)	67 (39%)	109 (63%)	73 (42%)				

# C2 JFC

# C2 Tier 2s

Joint Command and Control  
Functional Concept



February 2004

Battlespace Awareness  
Blue SA

The basic C2 functions are listed below:

- Monitor and collect data on the *situation*.
- Develop an *understanding* of the situation.
- Develop a *course(s) of action* and select one
- Develop a *plan* to execute the selected course of action.
- Execute the plan, to include providing *direction* and leadership to subordinates.
- *Monitor* execution of the plan and adapt as necessary.

## Command & Control

Tier 2

Tier 3

### Organize

- Cultivate external relations
- Structure organization to mission
- Foster collaborative environment

### Understand

- Implement shared situational awareness
- Develop knowledge
- Share knowledge

### \* Operational Planning

- Analyze problem
- Apply situational understanding
- Develop strategy
- Develop courses of action
- Analyze course of action

### Decide

- Manage risk
- Select actions
- Establish rule sets
- Establish intent and guidance
- Intuit

### Direct

- Communicate intent and guidance
- Task
- Establish metrics

### Monitor

- Assess compliance with guidance
- Assess effects
- Assess achievement of objectives
- Assess guidance

C2 JFC, Feb 04

# ***Headquarters U.S. Air Force***

---

*Fly – Fight – Win*

**Precision Strike Association Winter Roundtable**

## ***Application of ISR Capabilities to Tighten the Kill Chain: USAF Perspective***



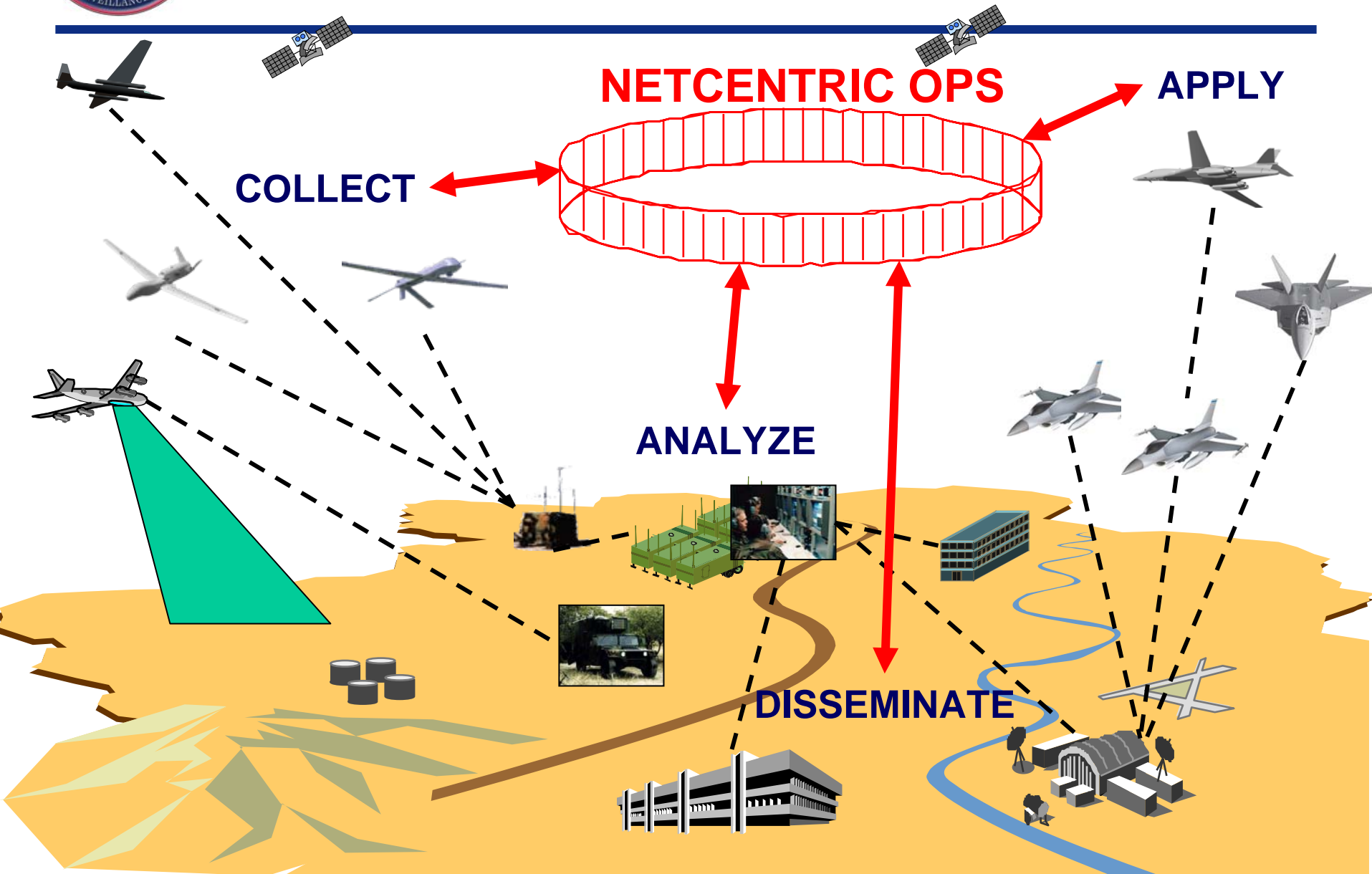
**Colonel Dash Jamieson**

**Director of ISR Transformation, HQ USAF**

---



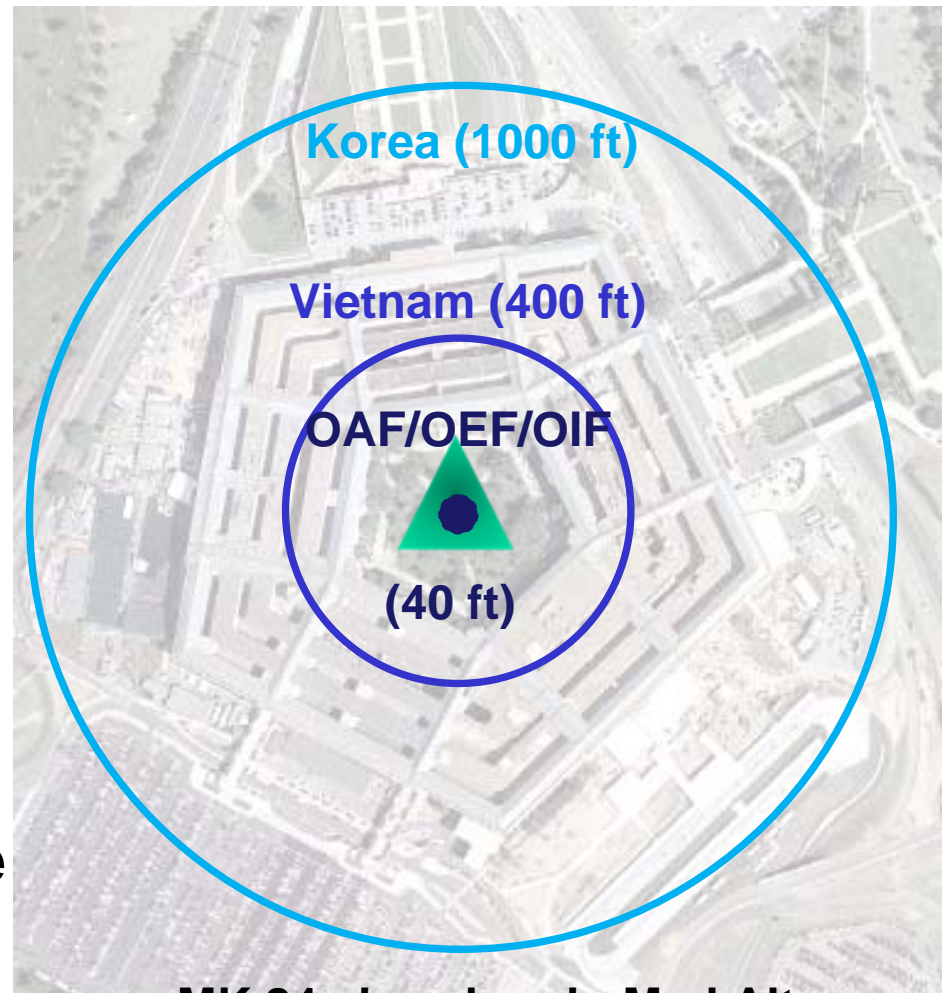
# ISR Effects





# Changing Focus

- **ISR has always been about the kill chain**
  - **Artillery spotting**
  - **Roots of airpower**
- **20th century – Hitting Targets**
  - **Anywhere, anytime**
- **21<sup>st</sup> century – Determine and Assess Effects**
  - **Kinetic or non-kinetic**



MK 84 class bomb, Med Alt



# *The Prominence of ISR Operations*

- **Not just the enemy or type of war**
  - **Non-state actors, Irregular warfare**
- **Expectations**
- **Desert Storm: 99% of sorties had assigned targets**
- **OIF: 99% of sorties take off w/unknown target**
- **Requires flexibility**
  - **Extremely netted operations**
  - **Global effects**
  - **Minimal footprint, risk**
  - **Projects power, not vulnerability**



*Fly – Fight – Win*



# Optimizing the Kill Chain



**“Interoperability is all about what capabilities I have that can make your operations better. Interdependence is all about what you need done that you can’t live without, (and) my capability is the only capability you have.”**

**General Ronald E. Keys**



# Predator Video

FRIENDLIES

SNIPER



*Fly – Fight – Win*



# *The Wave of the Present*

## *How Do We Improve Today?*

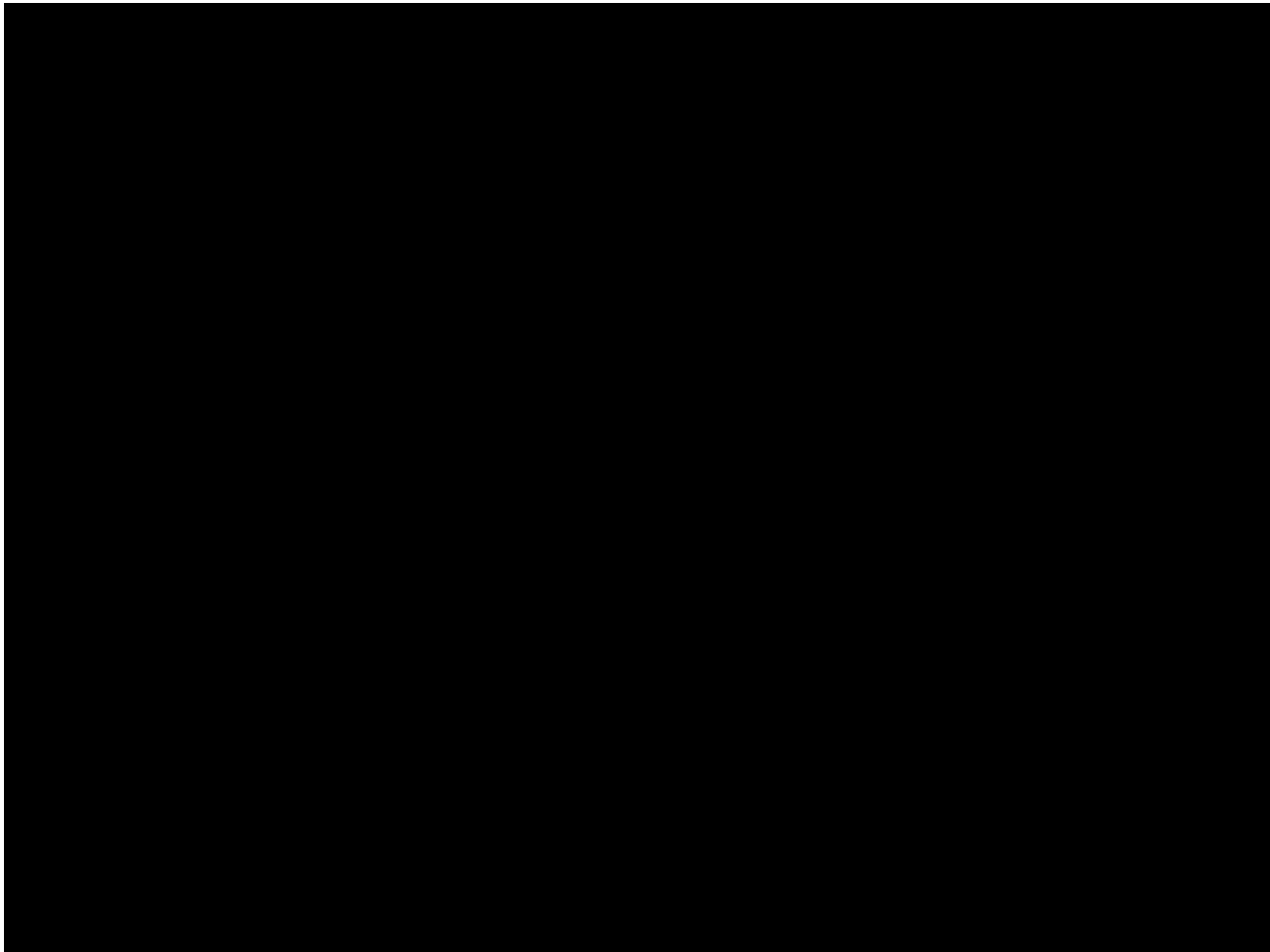
- UAS role surpassing expectations
  - Capability, versatility
  - Value for cost
  - Reliability, maintainability
  - Significantly reduce risk
- Deputy SecDef Memo 13 Sep 07





# *F2T2EA...and E Again*

---



---

*Fly – Fight – Win*



# ISR Inventory Evolving



- Paradigm shift in terms of iron
- Legacy ISR Aircraft: LD/HD won't be fixed through procurement
- Mission Migration From Manned To Unmanned
  - Deliver wide range of kinetic and non-kinetic effects
  - Increased ranges, loiter times, payloads with decreased risk and footprint



- Sensor-Shooter line blurring
  - UAS adding attack capability
  - Next gen aircraft incorporate ISR capability



*Fly – Fight – Win*



# *F2T2EA to F3*



**Predator: 600+ hours looking for and tracking al-Zarqawi**

**+**



**2 F-16Cs: 10 minutes of force application**

**=**



*Fly – Fight – Win*



# ***Self-Imposed Hurdles***

## ***Overcoming Semantics***

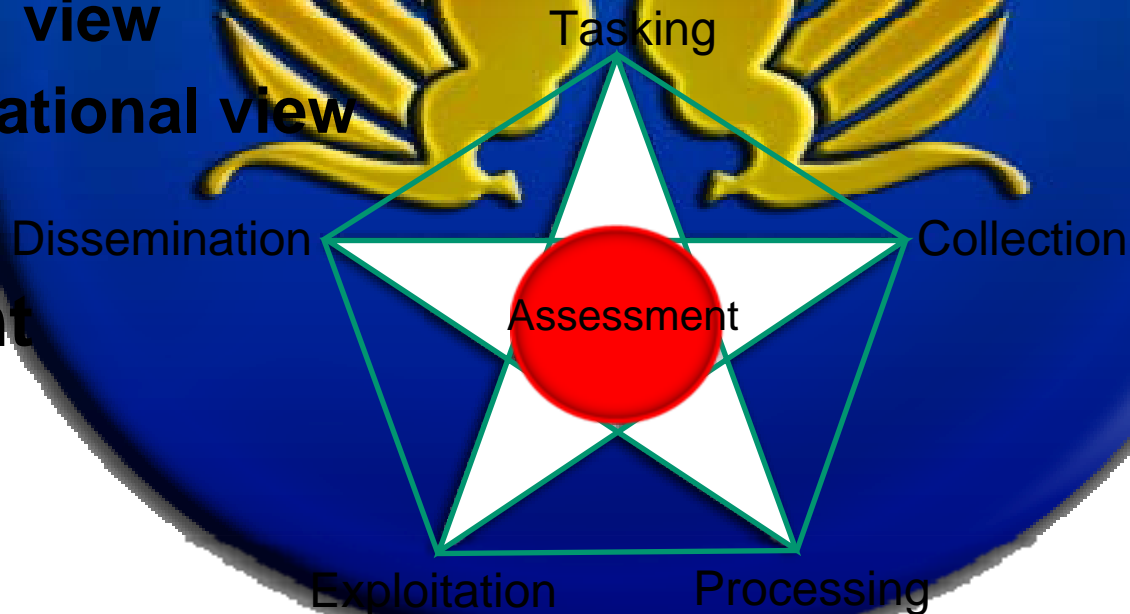
---

- Strategic – Operational – Tactical
  - Effects not platforms
- Sensor – Shooter
  - Nomenclature constricts potential
  - Misperceptions
    - F/A and *non-traditional ISR*
    - RQ can't shoot
- ISR: Support or Operations?
  - ISR *Is* Ops...the *Hunter* in Hunter-Killer



# ISR Capabilities

- Result in a value-added effect
- Intelligence cycle as a lens
  - Traditional view
  - Transformational view
- Assessment



**Cross-domain integrated ISR optimizes effects chain**

*Fly – Fight – Win*

# Missiles & Weapons Market in Perspective

Jeff Ryder  
BAE Systems, Inc.  
January 23, 2008

# Introduction

---

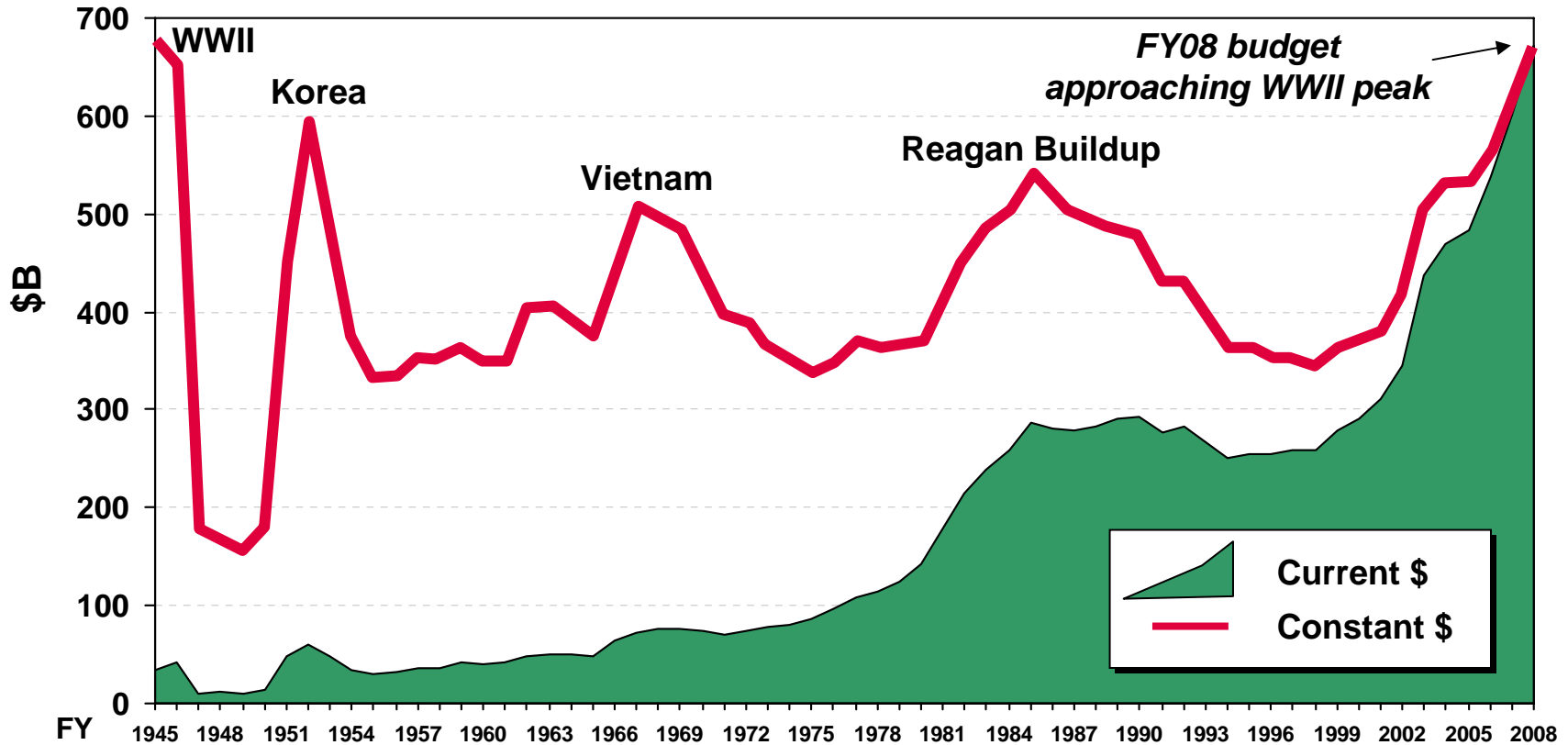
- 1** US defense budget outlook
  - Scenarios
  - Drivers
- 2** Missiles & Weapons budget outlook
  - Missiles, PGW, munitions and ordnance
  - Market forecast
- 3** Trends to reorient capabilities
  - Capability gaps
  - Future scenarios

## Approach

- GEIA: interview based, cross-industry analysis
- Defense budget analysis

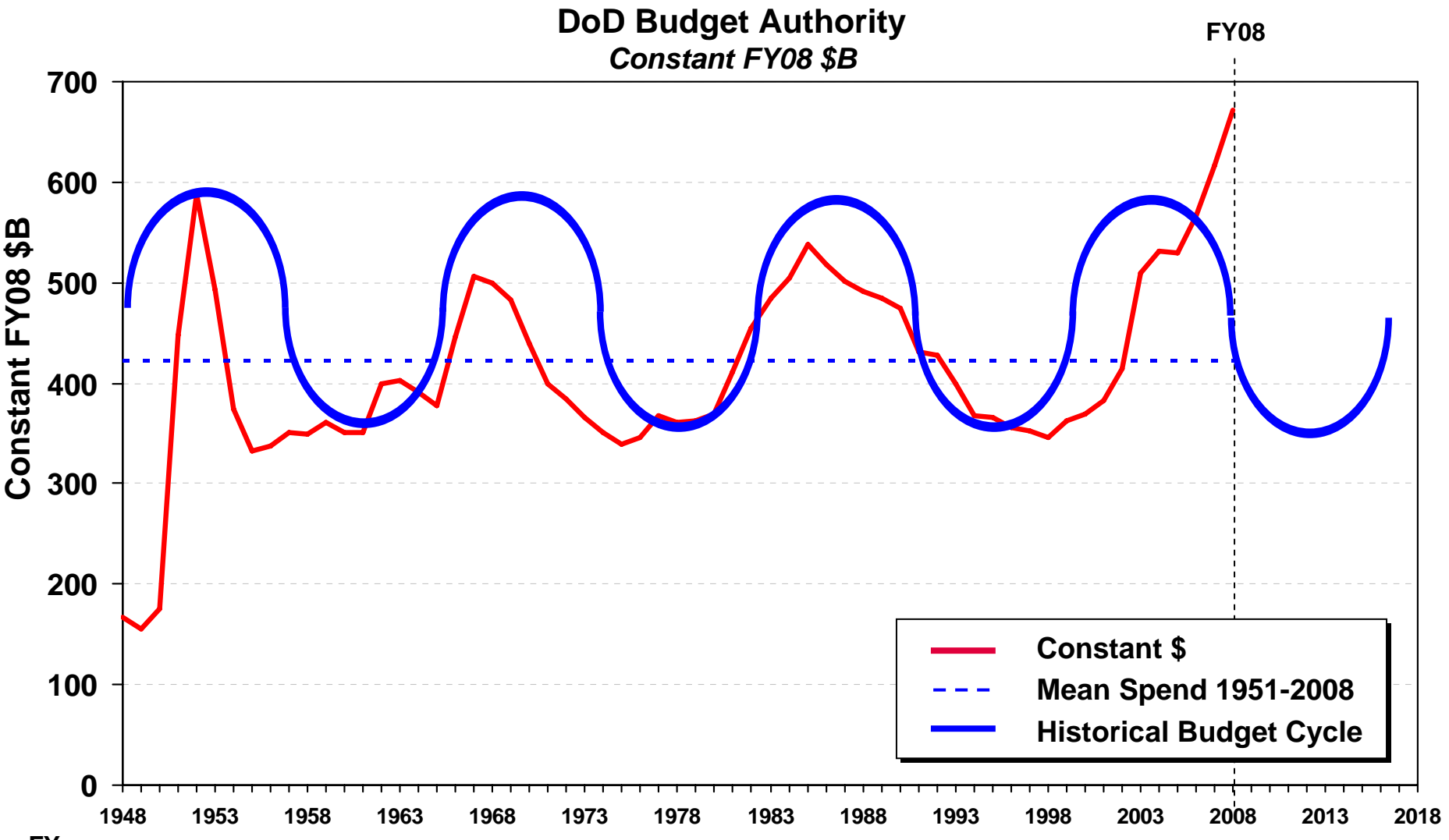
# The defense budget is approaching record-breaking levels

**DoD Budget Authority**  
*Current and Constant FY08 \$B*



Source: DoD Greenbook

# The budget is currently “off cycle” – a return to historical cyclicity would suggest a decline is imminent



— Constant \$  
- - - Mean Spend 1951-2008  
— Historical Budget Cycle

FY

Source: DoD Greenbook

# A number of factors shape the budget outlook – threat perception, politics and economics matter most

## Primary budget-shaping factors:

- Threat
- Politics
- Economics



### Factors that pressure the budget:

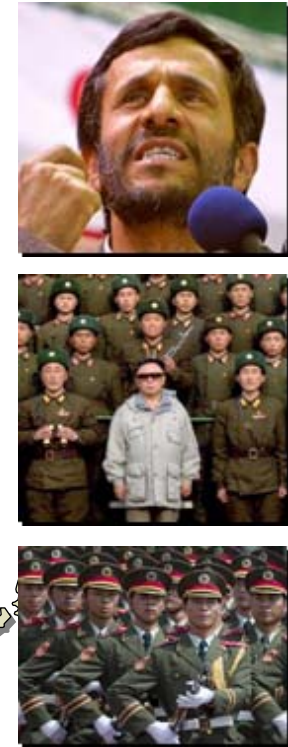
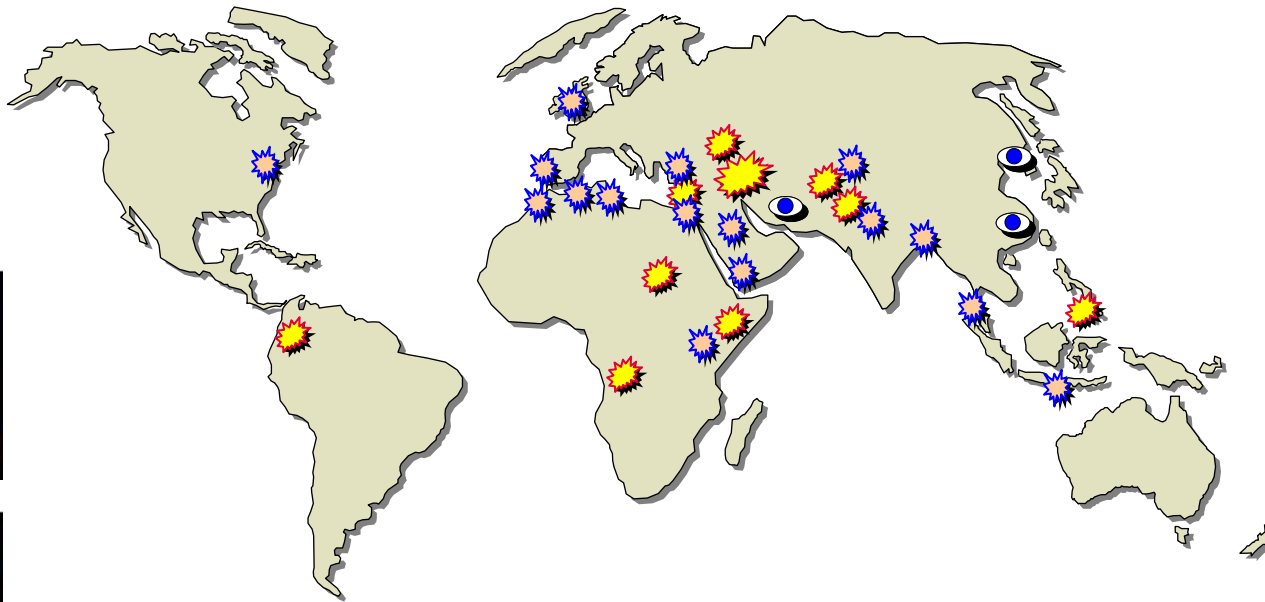
- Withdrawal from Iraq
- Increase in mandatory spending
- Popular disapproval of defense spending

### Factors that buoy the budget:

- High Optempo
- Rising Operations & Support (O&S) costs
- Reset requirements
- Investment requirements

# The security environment has become increasingly complex

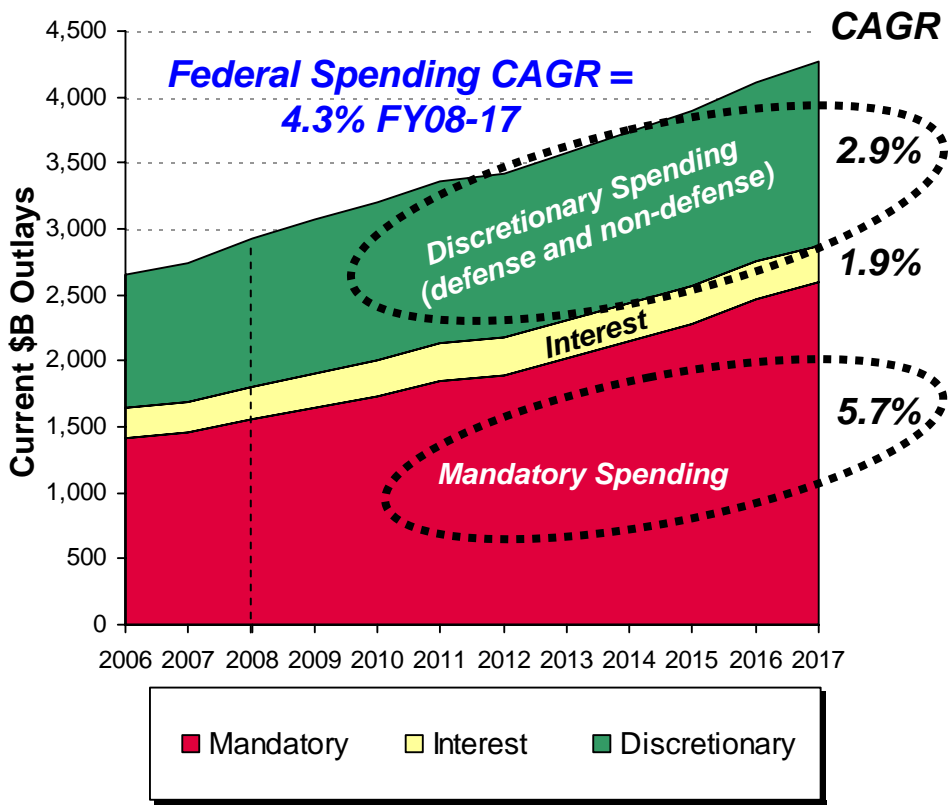
## Global Security Environment



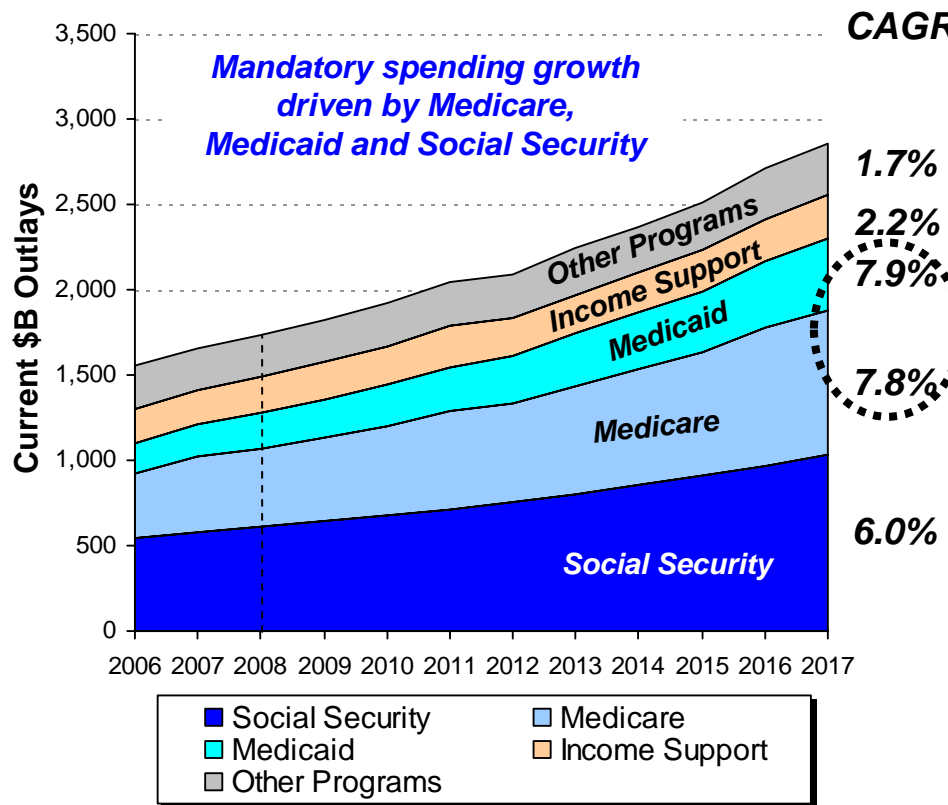
-  Al Qaeda Attack
-  Conflict Zone
-  Ongoing Concern

# A key economic/fiscal factor in the defense forecast is the rapid growth in mandatory spending accounts

**Federal Spending  
by Major Category 2006-2017**



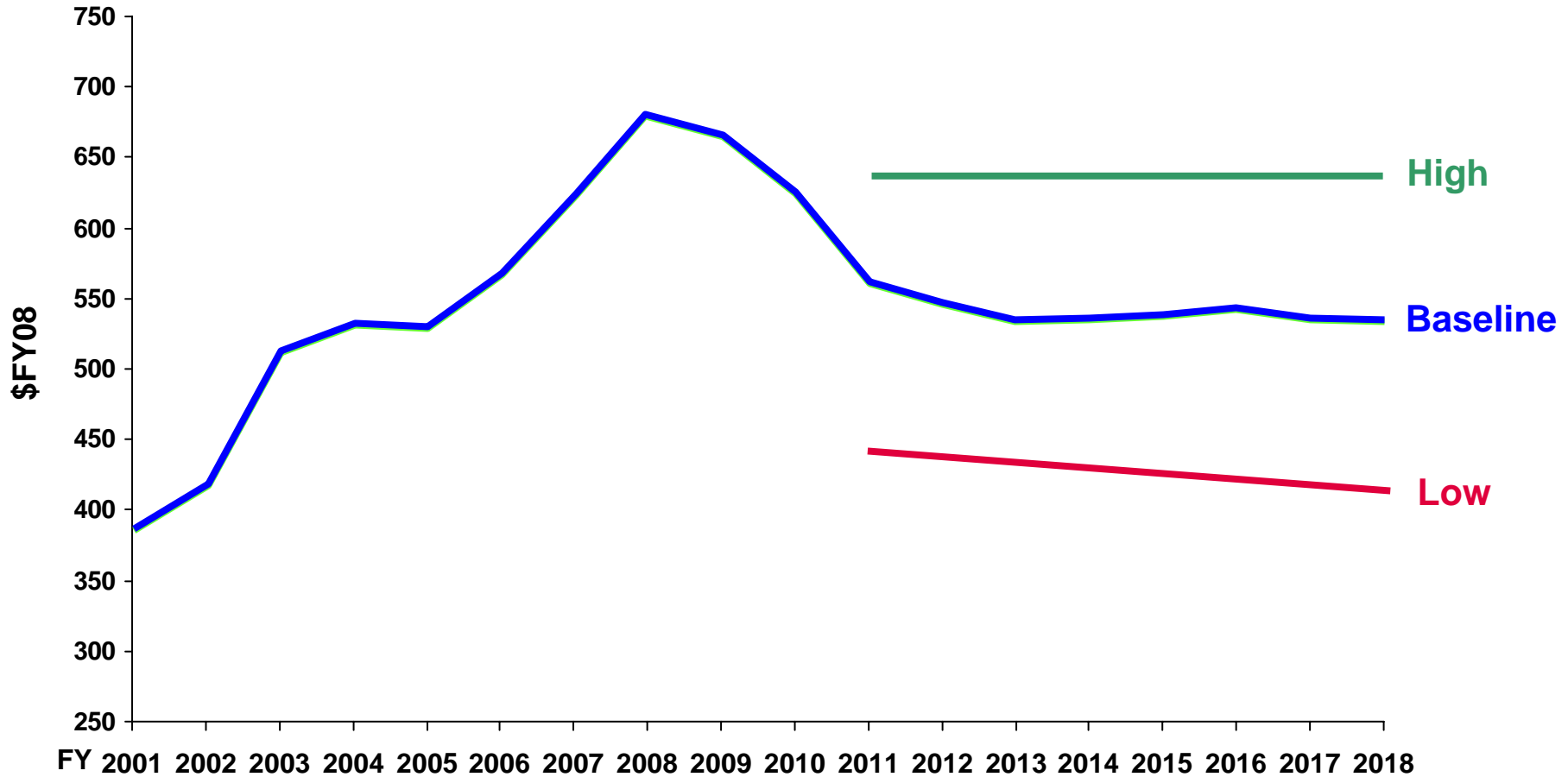
**Mandatory Spending  
By Account 2006-2017**



Source: CBO projections, August 2007

# Future spending will likely remain high by historical comparison

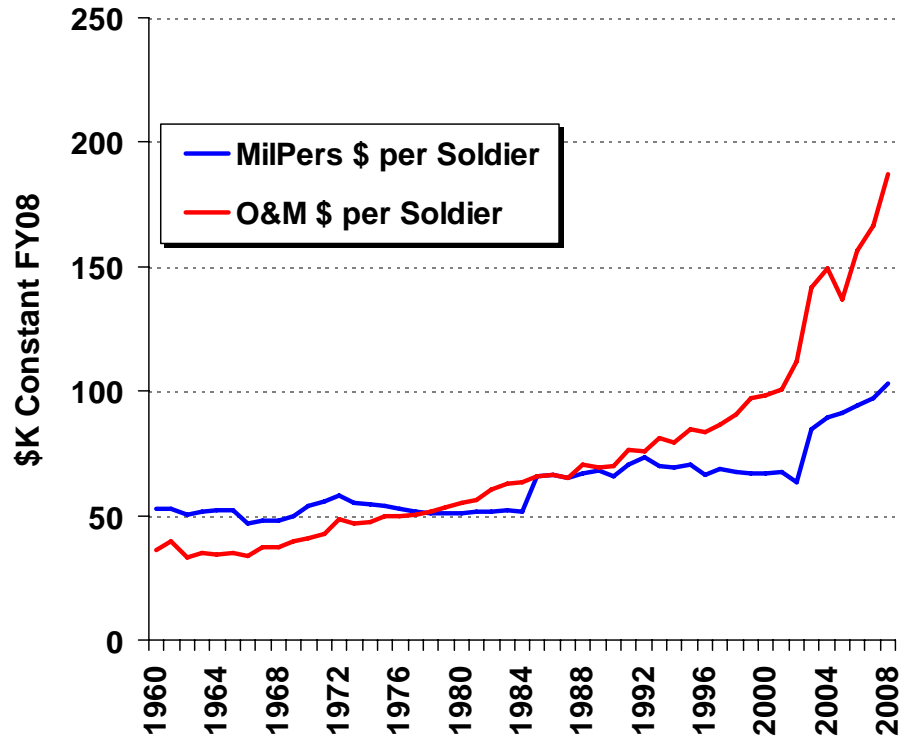
**US Defense Budget Scenarios vs. Budget Benchmarks**  
*Budget Authority, Constant \$FY08*



Source: DoD Greenbook FY08, GEIA, BAE Systems, Inc.

# Upwards budget pressure is driven by the inexorable rise in Operations & Support costs

Spending per Soldier: MilPers vs. O&M  
Budget Authority, Constant \$FY08

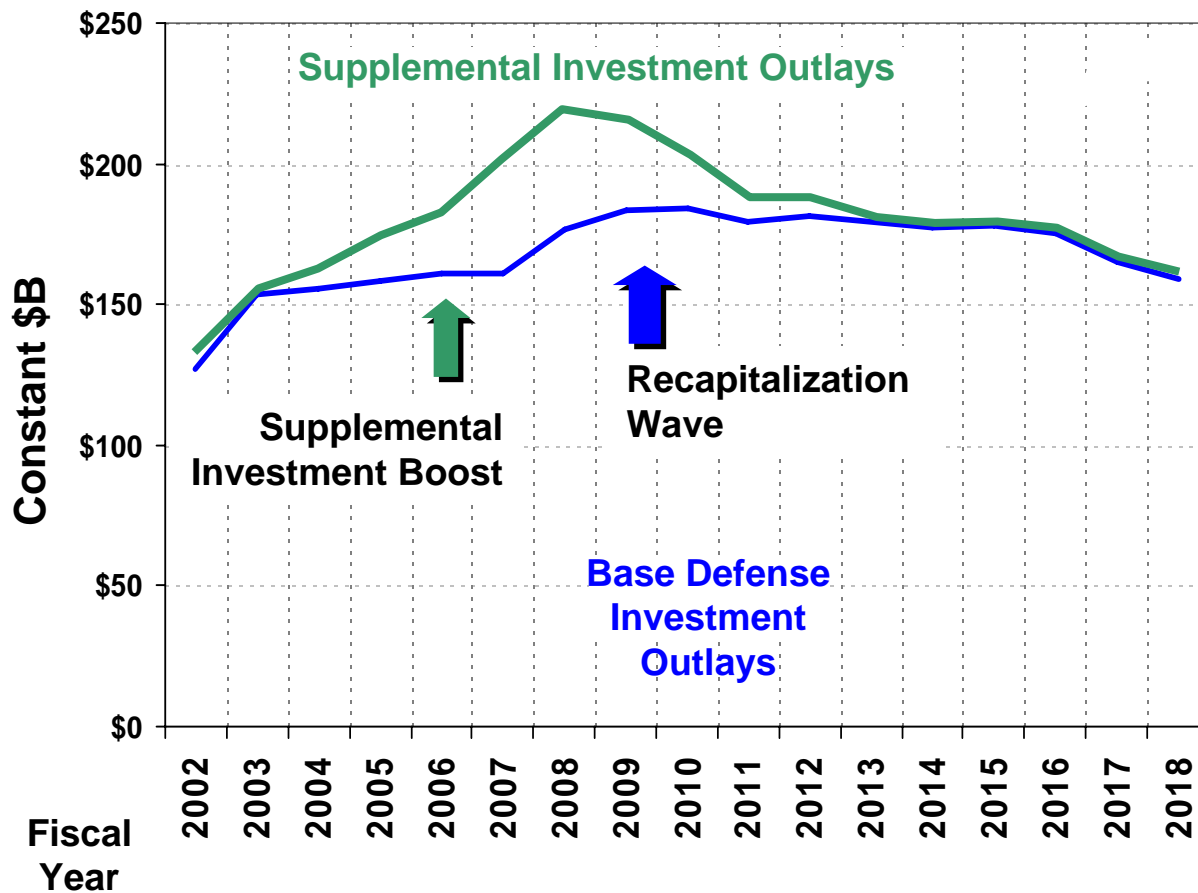







- O&M drivers
  - High Optempo
  - Aging fleets
  - Increasing complexity of weapons
  - Rising fuel costs
  - Increasing use of industry contractors
- MilPers drivers
  - Force augmentation (+92,000)
  - Healthcare (costs doubled 2000-2005)
  - Rate of military retiree and dependents increased 6.0% per year 2001-2005
  - Upwards pressure on compensation due to private-sector benchmarking

- Risk that O&S costs will erode investment accounts
- The only historical means to curb O&S growth has been to reduce end strength

# Investment spending will decline in real dollars

**Investment = Procurement + RDT&E**  
*Budget Authority, Constant \$*



-  Current investment funding forecast insufficient to fully fund current portfolio
-  Cost increases, (historically 15%) could add a \$25B burden
-  May see additional Service requests
-  O&S budget intrusion
-  Portfolio trades will continue, placing premium on program performance

Source: DoD Greenbook FY08, GEIA

## The Services indicate investment prioritization on platforms

### Service Investment Priorities

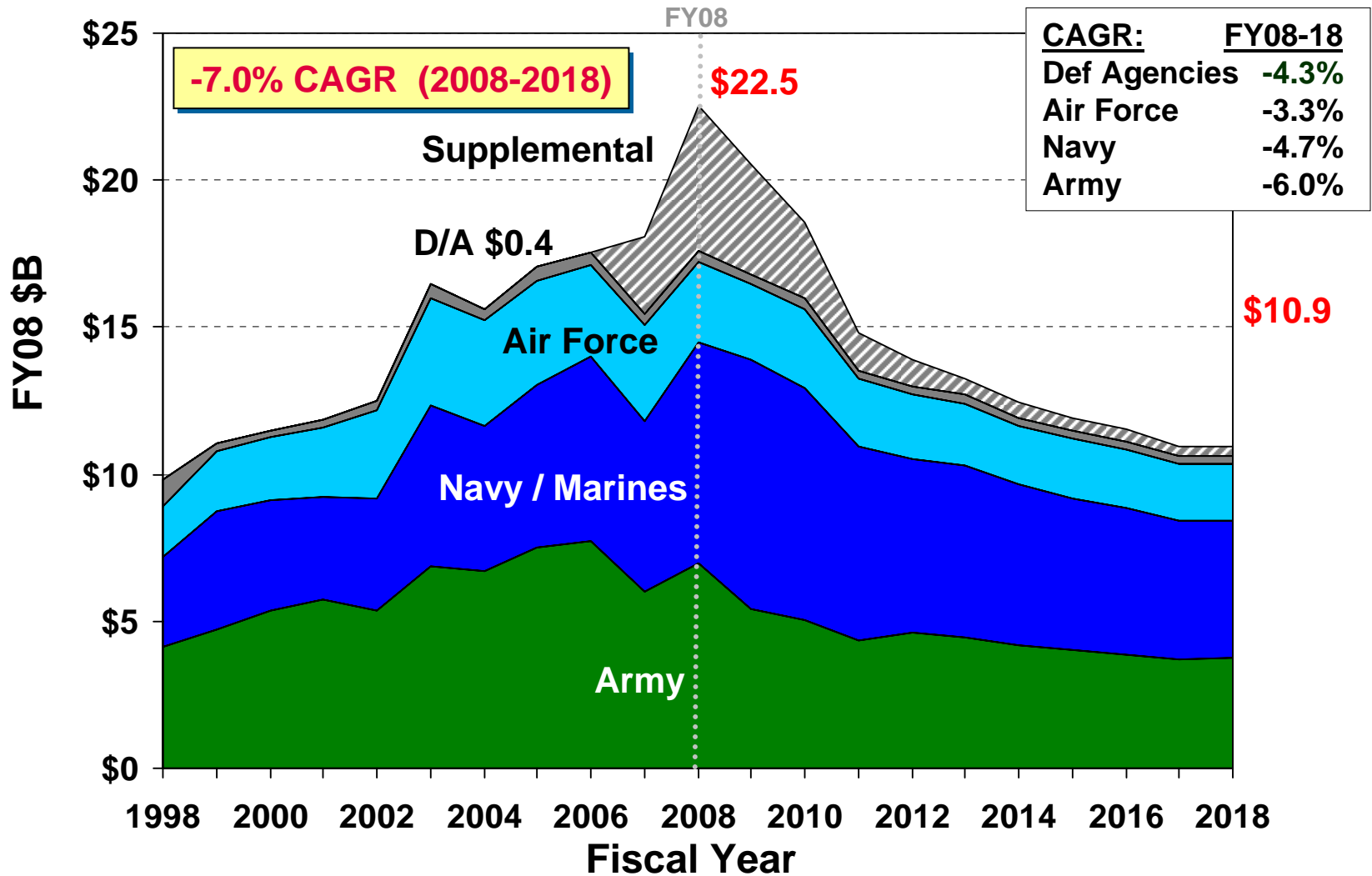
Service	Investment Priorities
Air Force	<ul style="list-style-type: none"> <li>• F-22</li> <li>• KC-X</li> <li>• C-17/C-5</li> <li>• CSAR-X</li> <li>• JSF</li> <li>• LRS</li> <li>• SBIRS</li> <li>• TSAT</li> <li>• Space Radar</li> </ul>
Navy	<ul style="list-style-type: none"> <li>• Shipbuilding (CVN-78, DDG-1000, LPD-17, LHA(R), Virginia)</li> <li>• Aircraft modernization (JSF, F/A-18 E/F, EA-18G, BAMS, MMA/P-8A)</li> </ul>

Service	Investment Priorities
Army	<ul style="list-style-type: none"> <li>• FCS</li> <li>• FMTV/JLTV</li> <li>• Helicopter modernization</li> <li>• MRAP</li> <li>• Force augmentation</li> </ul>
Marine Corps	<ul style="list-style-type: none"> <li>• JSF</li> <li>• Expeditionary Fighting Vehicle (EFV)</li> <li>• Light Armored Vehicle (LAV)</li> <li>• Amphibious shipbuilding</li> <li>• V-22</li> <li>• CH-53K</li> <li>• Force augmentation</li> </ul>

## Missiles & Weapons budgets will decline over the next decade, with emphasis on upgrades as opposed to new starts

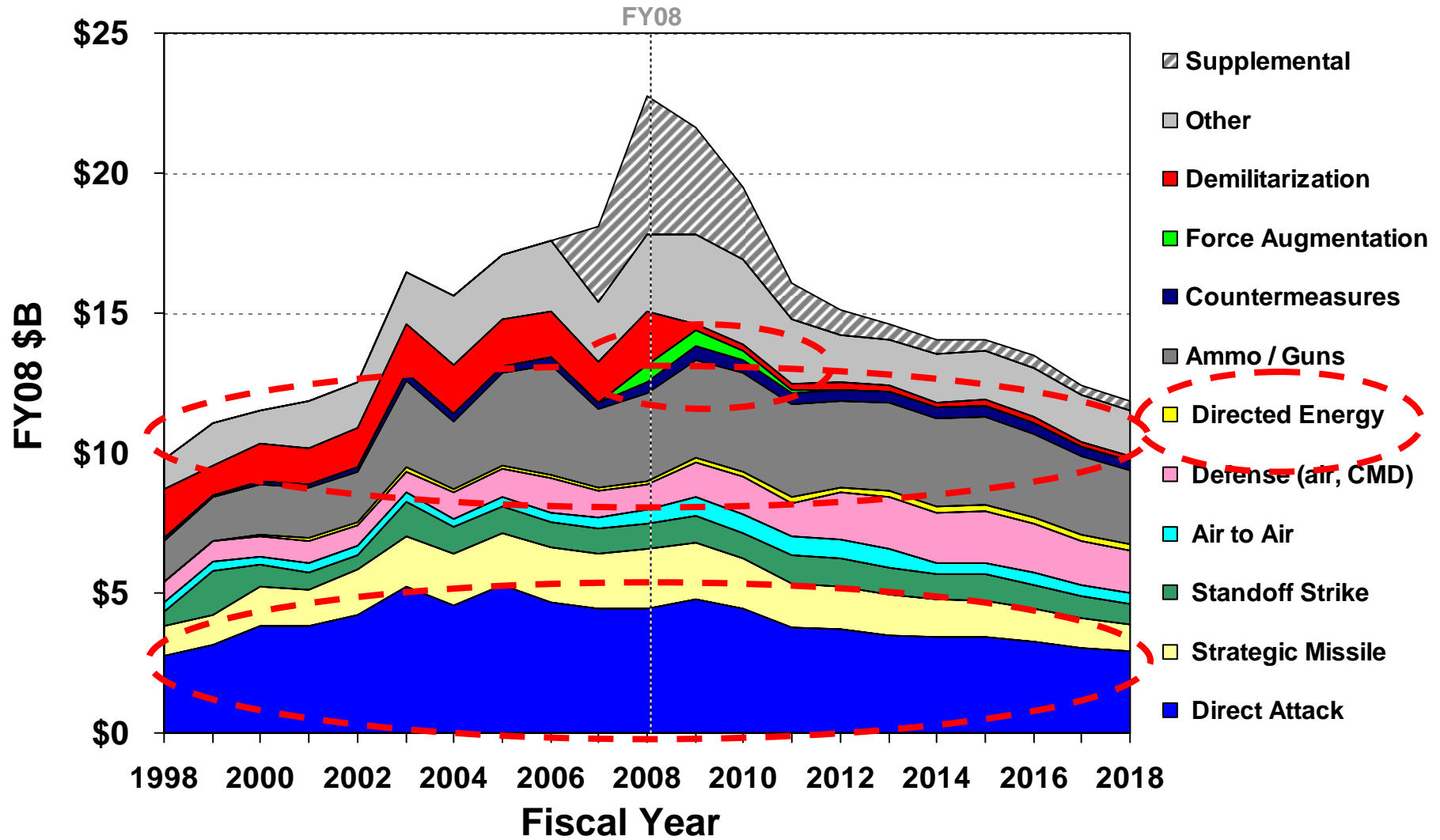
- Missiles & weapons budget will decline over the forecast period
  - Pressure on topline and between Services
  - Supplemental war funding expected to drop off in near term
  - Several major programs have/will be winding down
  - Concern weapons will become bill payer for platforms
- Spending profile shows few new program starts
  - Emphasis on improving and upgrading legacy systems
  - Iraq/GWOT driving primary requirements and capability gaps
  - Replenishment for expended ordnance and fatigue
  - Force Augmentation (Army, USMC) in near term

# Market Forecast: By Military Service



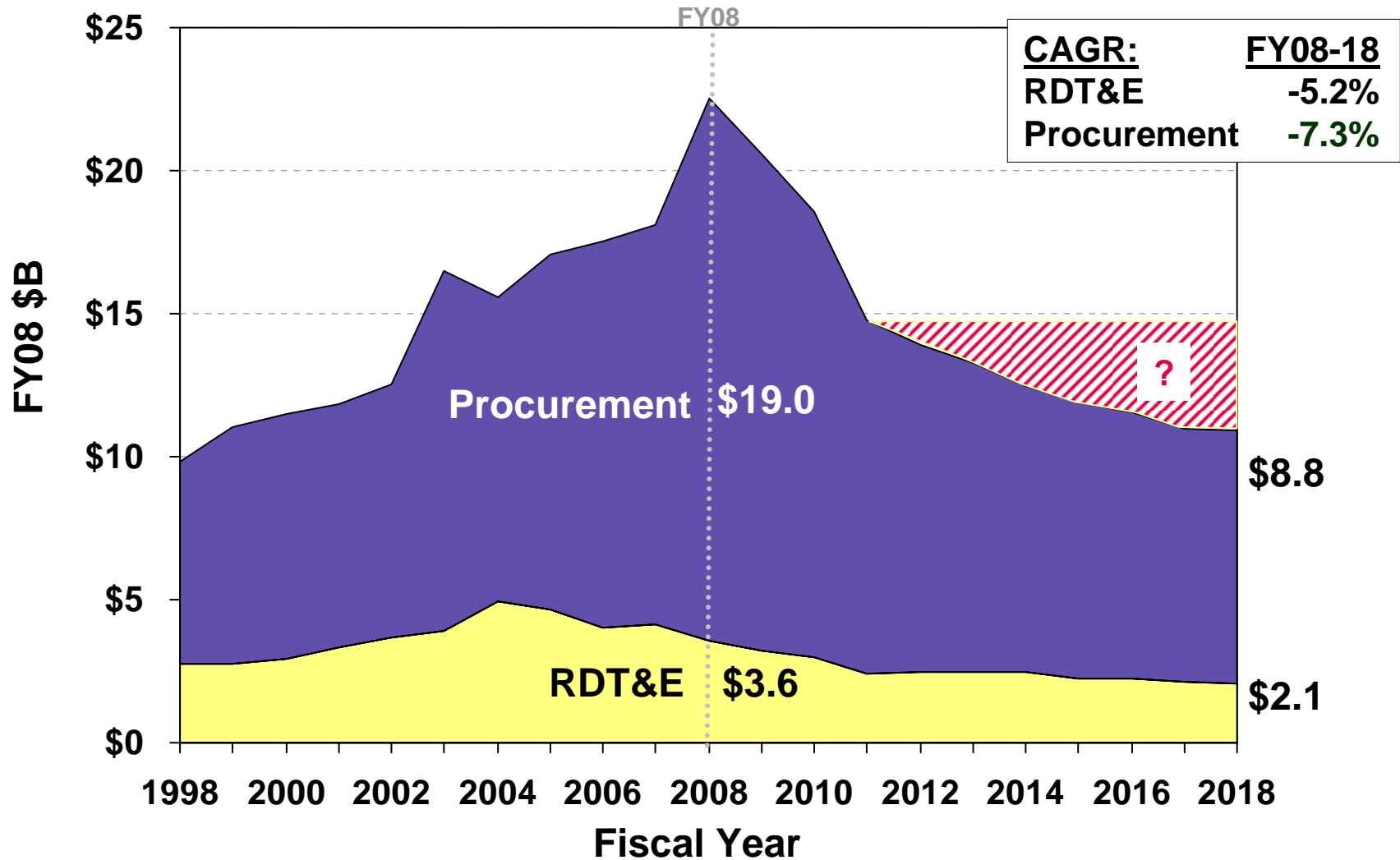
Source: GEIA

# Market Forecast: By Segment



Source: GEIA

# Market Forecast: Procurement vs. RDT&E



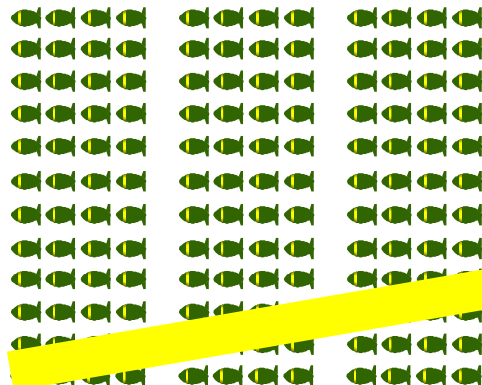
Source: GEIA

# Evolution of precision engagement drives perception of missiles and weapons versus other defense investment segments

**1943**



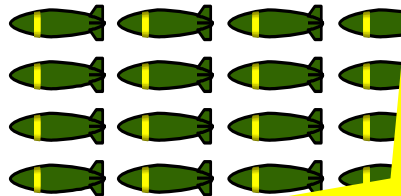
**1500 B-17 sorties**  
**9000 bombs**  
3300 ft CEP  
One 60' x 100' target  
WWII



**1970**



**30 F-4 sorties**  
**176 bombs**  
400 ft CEP  
One Target  
Vietnam



**1991**



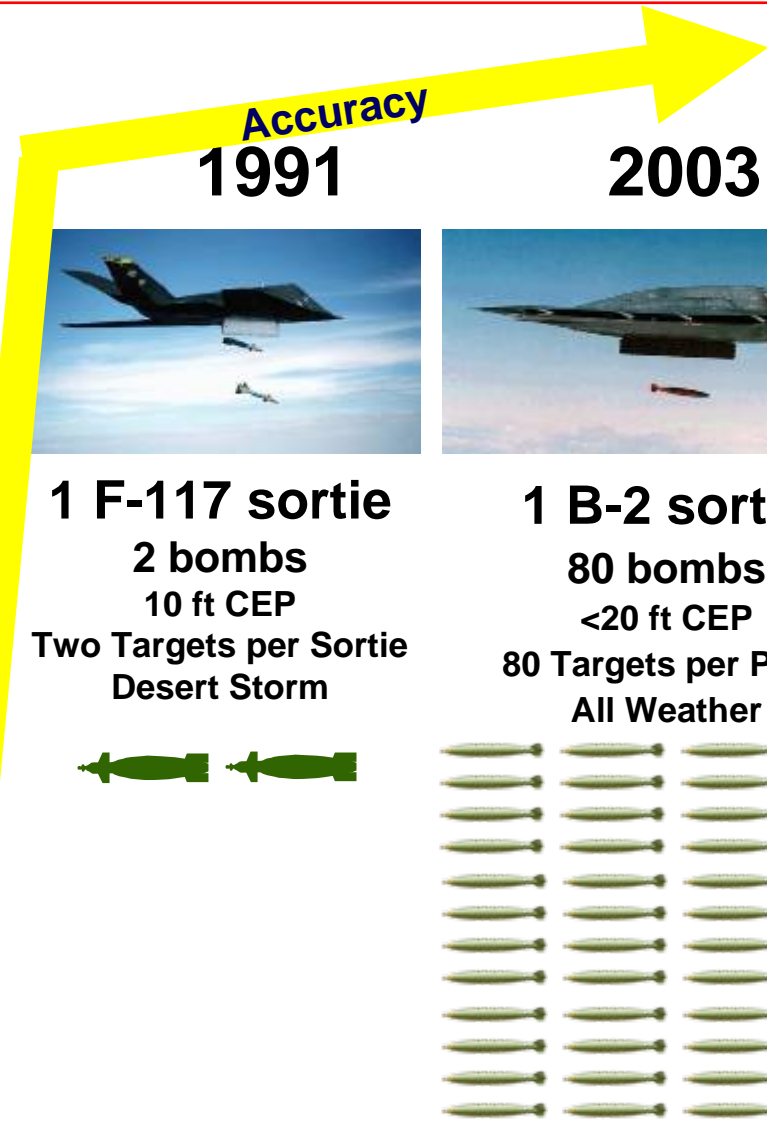
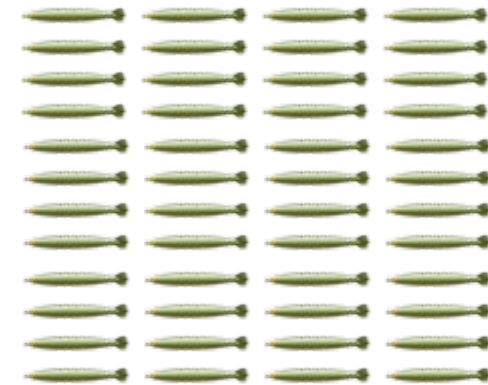
**1 F-117 sortie**  
**2 bombs**  
10 ft CEP  
Two Targets per Sortie  
Desert Storm



**2003**



**1 B-2 sortie**  
**80 bombs**  
<20 ft CEP  
80 Targets per Pass  
All Weather



Source: USAF

**Despite today's battlefield challenges, US forces are using existing weapons for desired effect...**



**...the real issue is targeting and networking**

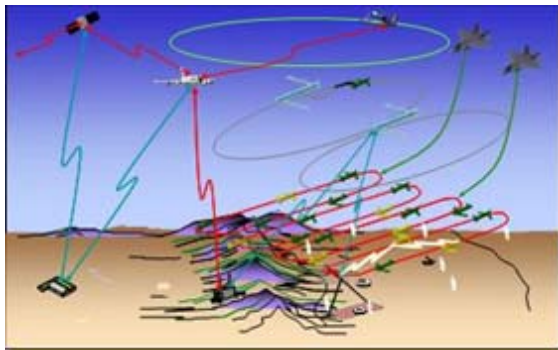
# Iraq is driving many of the capability requirements

- Moving targets, fleeting targets
- Precision engagement in all weather
- Urban Close Air Support (CAS)
- Shortened kill chain
- Improved reliability
- Low collateral damage
- Non-lethal effects
- GPS interrupted / denied environments
- Hard and Deeply Buried Targets (HDBT)
- O&S assumptions built into design due to captive carry



## Current Environment: Key Technologies

- Multi-mode seekers
- Datalinks
- Sensor fuzing
- Flexible warheads, scalability
- Hypersonic
- Smart fuzes
- Directed energy



**Smart technology insertion needed to achieve cost-friendly, balanced capability portfolio**

# Numerous potential opportunities...

## Near term <2010

- JAGM
- Smart artillery, mortars, rockets, tank rounds
- Direct attack moving target capability (DAMTC)

## Mid-Term 2010-2015

- FCS Precision Munitions
- Weapons for UAVs
- Hard and Deeply Buried Targets
- Tactical Laser
- High Power Microwave
- Over-the Horizon Anti-Surface Warfare Weapons
- Swarm Ship Defense
- Joint Dual Role Air Dominance Missile (AA, AG)
- Long-range strike weapon
- Next-gen Torpedoes
- Non-Lethal Effects

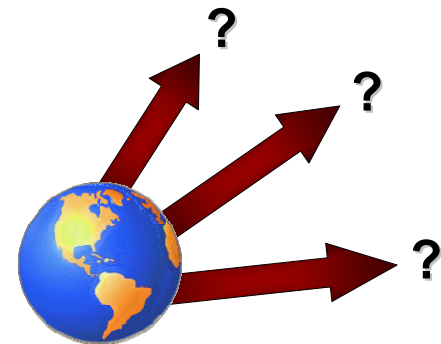
## Far-Term 2015+

- Directed Energy
- Future Cruise Missile
- Electro Magnetic Rail Gun
- Autonomous Target ID

**...but no clear roadmap**

## Impact of a “Global Terrorism” vector

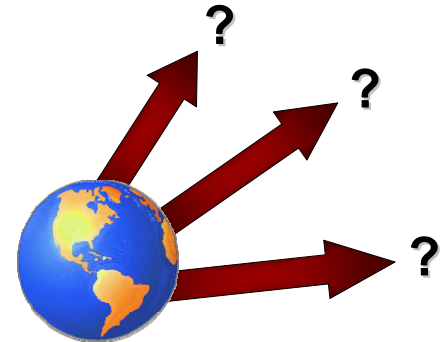
- Emphasis on CAS in any environment with small, high-speed, precision weapons
- Requirements may expand for:
  - Fleeting target capability
  - Sensing and discriminating low-profile targets
  - Networking of all ISR platforms to rapid strike
  - Emphasis on speed over range
  - Low collateral damage
  - Scalability
  - Precision in all environments
  - Directed energy for non-lethal effects
  - Loitering weapons
  - Weaponizing UAVs



**No appreciable difference versus baseline budget, though requirements may shift**

## Impact of a “Multipolar Alignment” vector

- Technology development to prepare for near-peer challenge:
  - Increased emphasis on baseline requirements (i.e. moving targets, all weather, networked weapons, etc.)
  - Emphasis on range as well as speed – fast, standoff weapons
  - Over-the horizon surface warfare
  - Advanced torpedoes
  - Cruise missiles
  - Hypersonic propulsion technology
  - Directed energy for force application / protection
  - UCAV weapons



**Budget increases, though missiles & weapons  
will continue to compete with platforms**

# Potential disruptions

- Directed Energy
  - DE expected to be complementary to kinetic weapons
  - Technology development may come in advance of CONOPS / policy evolution
  - User pull required
  - ABL shutdown (FY 09) and ATL, HEL tech demonstration programs may indicate how quickly DE evolves operationally
- Cyberspace
- Convergence with or divergence towards other domains and sciences
  - Nano
  - Robotics
  - Bio

# Messages to Industry

---

- Contractors are doing a good job developing technology and addressing capability gaps
- Make the dumb weapons smart and the smart weapons cheap
- Don't try to add capability when it's not needed
- Emphasize realistic cost estimates

***Thank You***



# The Joint Capabilities Integration & Development System (JCIDS)

Demonstrating Relevance to Decision-Makers

14 January 2008

Lt Col Robert “Prince” Valin

Joint Staff (J8), Force Application Engagement Division

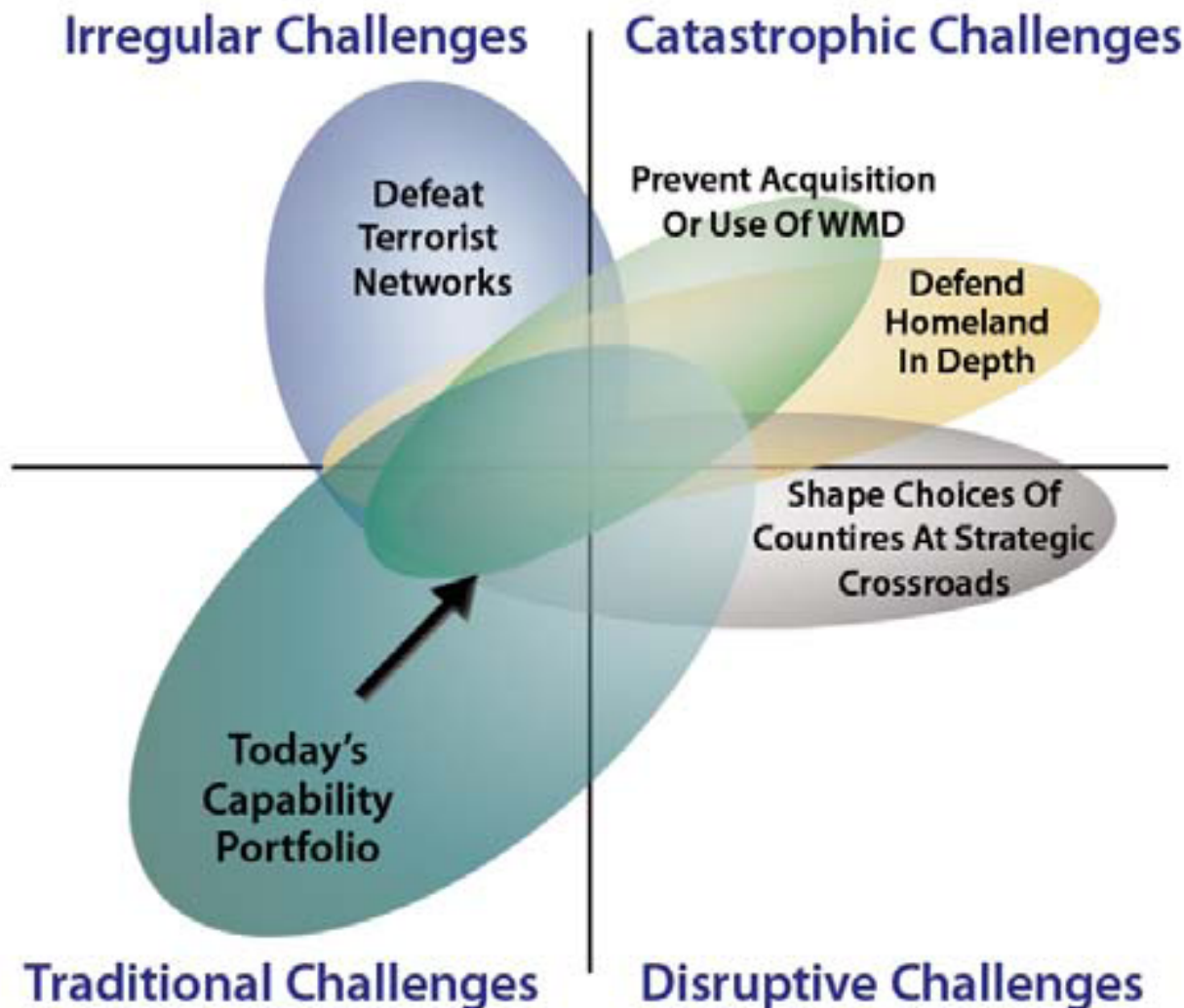
- The views expressed here are my own and are not necessarily representative of DOD, the Joint Staff, or the Air Force

- 2002 SecDef Memo
  - “... clear it [the requirements system] is broken ... inevitably continues to require things that ought not to be required, and does not require things that need to be required.”
  - Priority theme ...
- Change to Dynamic, Unpredictable Environment
  - Previous -- Cold War focus, singular threat source
  - New world order – threat is a “Hydra”
    - State and Non-State sources
    - Threats in every corner of the world
- What is the basis for saying “yes” to Program X, and “no” to Program Y?

# *National Defense Strategy (2005)*



“Capabilities-based planning focuses more on how adversaries may challenge us than on whom those adversaries might be or where we might face them. It focuses the Department on the growing range of capabilities and methods we must possess to contend with an uncertain future. It recognizes the limits of intelligence and the impossibility of predicting complex events with precision. Our planning aims to link capabilities to joint operating concepts across a broad range of scenarios. The Department is adopting a new approach for planning to implement our strategy. The defense strategy will drive this top-down, competitive process. Operating within fiscal constraints, our new approach enables the Secretary of Defense and Joint Force Commanders to balance risk across traditional, irregular, disruptive, and catastrophic challenges. ***We will operationalize this strategy to address the spectrum of strategic challenges by setting priorities among competing capabilities.***”



“... the Department is shifting its portfolio of capabilities to address irregular, catastrophic and disruptive challenges while sustaining capabilities to address traditional challenges.”

Steady State

Surge



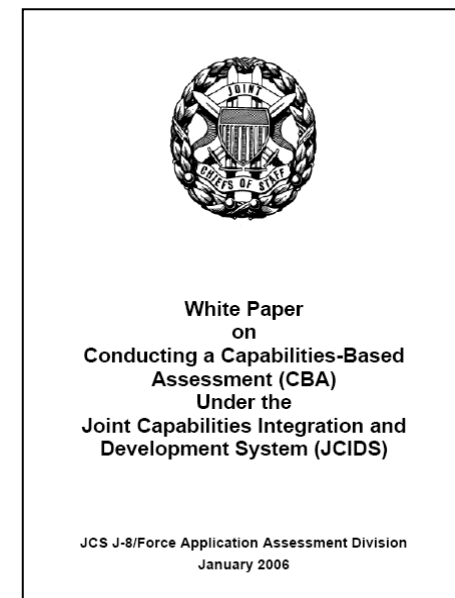
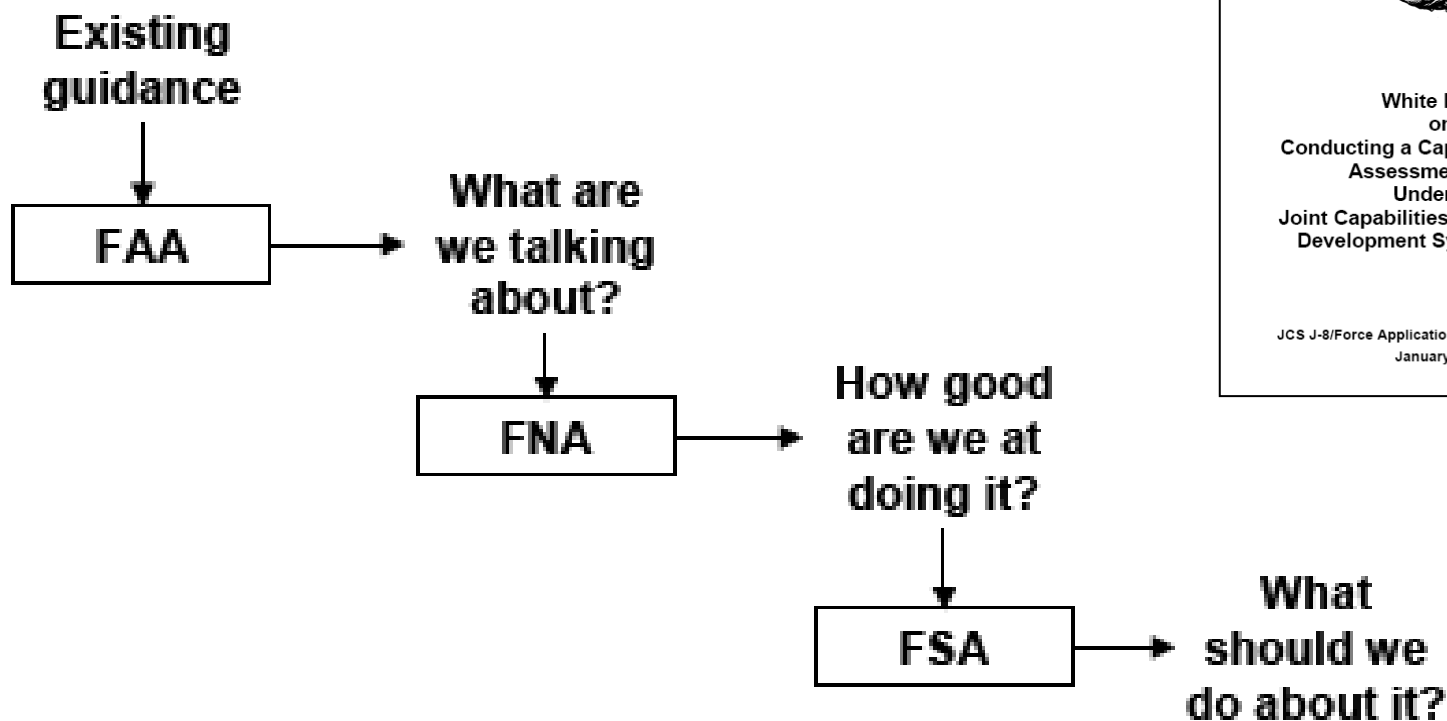
# The Analytic Agenda

	Steady-State	Surge
Current	Plans (OPLANs, CONPLANs, etc.)	
Mid-Year (+7 years)	Steady-State Scenarios SSSPs	Major Combat Operations Scenarios MCOs (WD, SDTE)
Out-Year (+20 years)		Swiftly Defeat the Efforts

- Scenario Level – broad outline developed by OSD(P)
- Multi-Service Force Deployment (MSFD) data – detailed CONOPS, developed by Joint Staff with all relevant DOD organizations
- Analytic Baselines – specific details approved for DOD use, approved by OSD/PA&E

- Finding a “need” for Program X is not enough ...
- Need should be evaluated FIRST
  - Assess utility against (many) potential threats
  - Is the threat “grave”? How important is the need?
  - When do we need it?
- Potential solutions need careful attention
  - Alternative solutions (to include non-materiel)
  - Offset consideration

*Is doing nothing a reasonable alternative?*



CBA Guide available at <http://www.dtic.mil/futurejointwarfare/>

- FAA defines the military problem being addressed and specifies evaluation criteria as tasks, conditions, and standards (i.e. scope)
  - Determine what will be evaluated (tasks), the relevant operational environments (conditions), and how well, or to what degree the joint force must do them (standards – proficiency and sufficiency)
  - Analogy: What are the course objectives; prepare final exam
- The FNA assesses how well DoD achieves the military objectives
  - Evaluate how well the war fighter will do the tasks, to include with non-traditional means. Results should specify gap impact on objectives (e.g. minor inconvenience, ‘we lose the war’, or something in between)
  - Analogy: How did the students do? Exam results?
- “Capability gaps” come in two flavors:
  - Proficiency – the ability to do the task in the specified conditions and to the specified standards
  - Sufficiency – the ability to do the task as much/often as DoD needs

- Given that a gap exists (from FNA), what are the most promising solution paths available?
  - “Banded” solutions encouraged!
  - Solution maturity (tech, manufacturing, etc.) must be evaluated
  - Cost effectiveness, risk must be evaluated
- Two potential documentation paths
  - Initial Capabilities Document (ICD) – Materiel “heavy”
  - DOTMLPF Change Request (DCR) – Non-materiel “heavy”
- ICD may lead Analysis of Alternatives (AoAs), two documentation paths:
  - Capabilities Development Document (CDD), if material development required
  - Capabilities Production Document (CPD), if solutions is “off-the-shelf”

- *Critical* Decision Point
  - Gap Identified
  - Potential Solution Paths Identified
  - Question: Should DOD apply resources to pursue a solution?
    - Viable answers require three big DOD tribes to agree!
- The CD Experiments
  - GS-Raid (Global Strike Raid)
  - JLTM (Joint Lightweight Tactical Mobility)
  - IAMD (Integrated Air-Missile Defense)
  - JRSG (Joint Rapid Scenario Generation)
  - JAGM (Joint Air-to-Ground Missile)
- The Evaluation of Alternatives (EoA)
- Tri-Chair Review/Decision

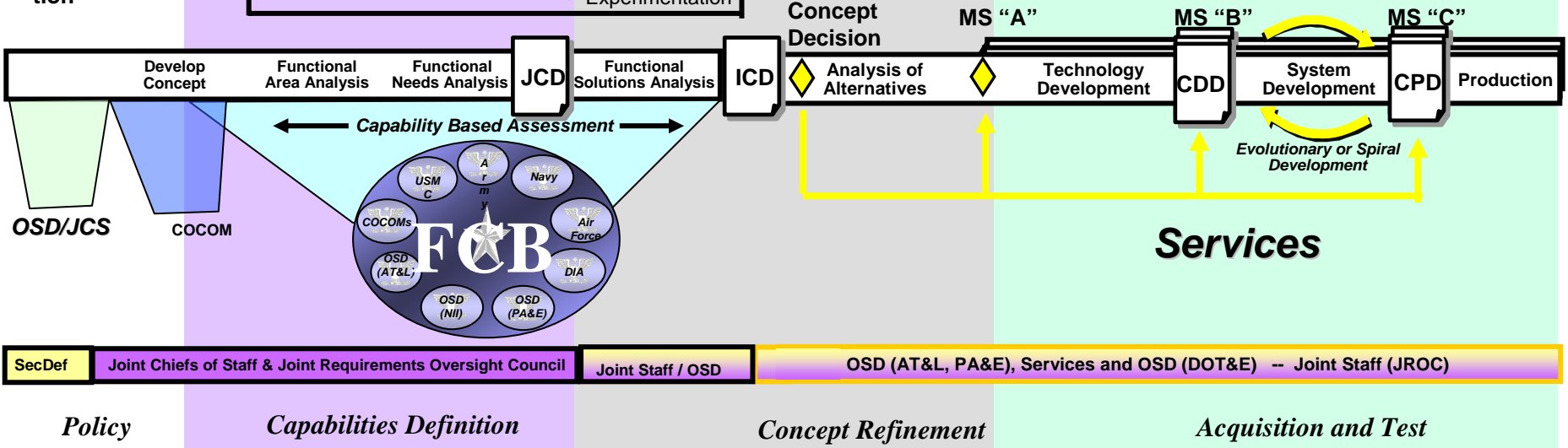
- Strategic Planning Guidance
- Defense Planning Scenarios
- Family of Concepts
- Transformation

**Capabilities Based Assessment**

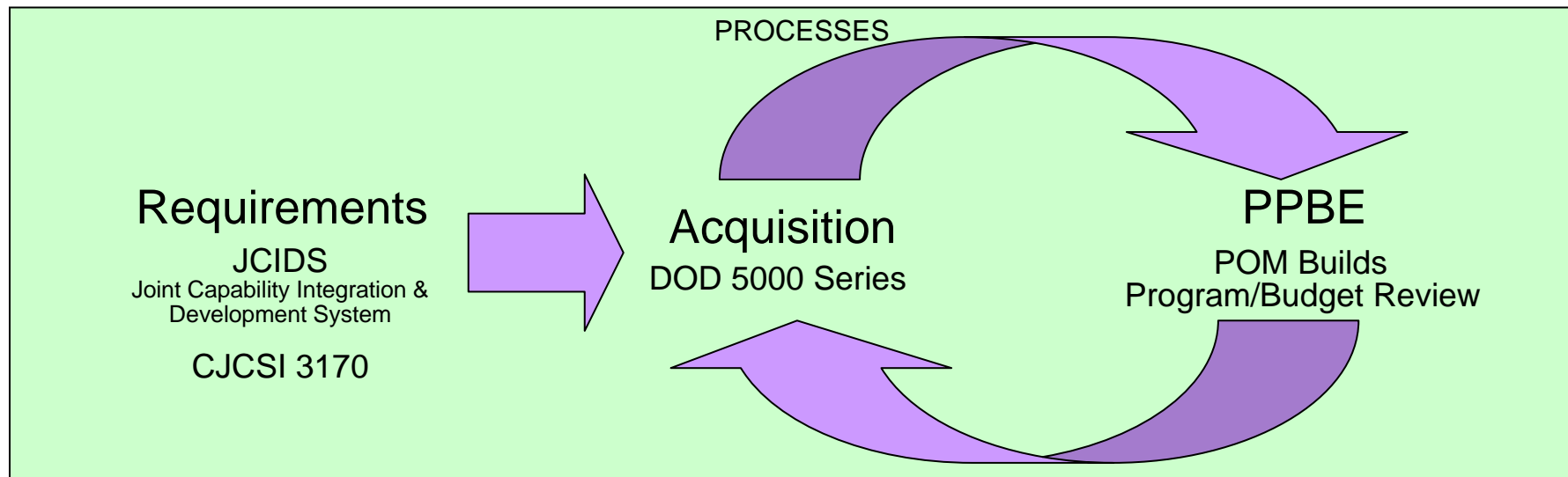
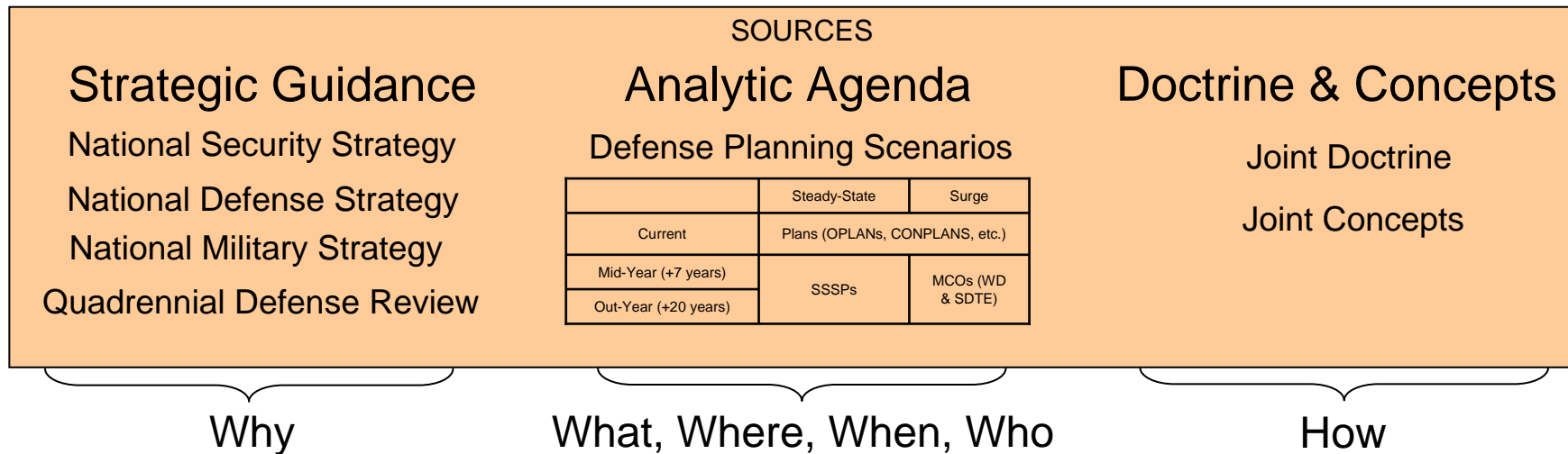
- Capabilities
- Tasks
- Attributes
- Metrics
- Gaps
- Shortfalls
- Redundancies
- Risk areas
- Non-materiel solutions
- Materiel solutions
- S+T initiatives
- Experimentation

- Refined concept
- Analysis of Alternatives
- Technology Development Strategy
- SoS System Engineering

- Affordable military-useful increment
- Technology demonstrated
- Initial KPPs
- SEP
- Revise KPPs
- Detailed design
- System integration
- DT&E
- LRIP
- IOT&E



# Capabilities Based Planning – The Big Picture



**Criticism**

- Not Responsive Enough

---

- Ties to “effects-based operations” and/or Joint Concepts
  - Capabilities can’t be tied to specific adversaries or places
  - Too ethereal to substantiate real-world application

---

- Ineffective Prioritization
  - First attempts tied to “gaps” as proposed by COCOMs, Services
  - Impact of DOD mission objective attainment minimal, subjective
  - Current efforts to prioritized Joint Capability Areas (JCAs)

**Response**

Transition from RGS (3+ years)  
 JRAC  
 Increasingly flexible (rules)  
 Scrutiny will remain

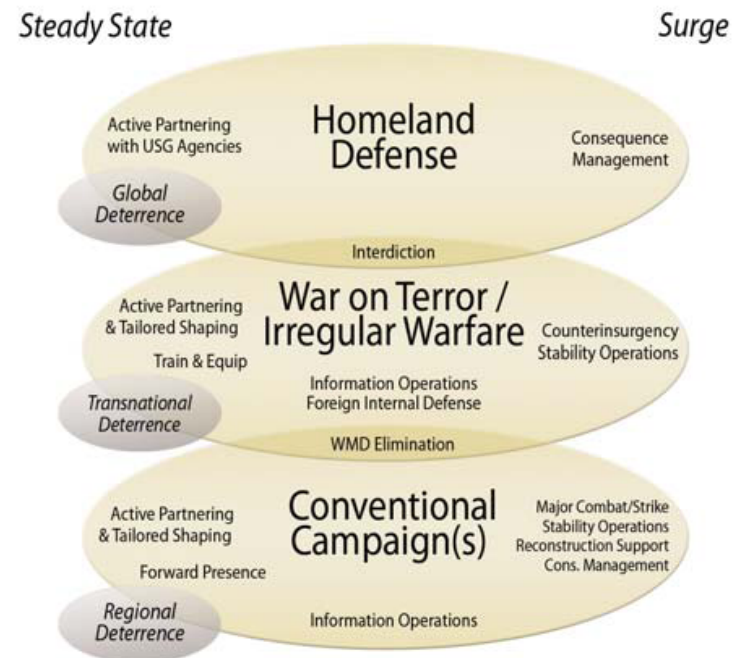
---

“Effects” and EBO not the same  
 Focus on need, not solution-based  
 Joint Concepts only help the “how”

---

Guilty!  
 Way-Ahead TBD – hopefully based on mission priority, objective attainment, and time of need  
 Useful for trades  
 Not helpful in roll-ups

- 1 to N, or Trades?
- Gap “grades”
  - Time
  - Impact to scenario
  - Scenario importance
    - How many scenarios?
    - Weighted importance?
  - Evaluation time – updates?
- Previous concept issues



- Good bet
  - Emphasis on “Interdependence”
    - Beyond interoperability
    - Conflict with some established doctrine/concepts, particularly when “organic” solutions are offered to address enterprise-wide capability gaps
      - Logistics (e.g. airlift)
      - C4ISR (e.g. Intelligence collection, Information dissemination)
      - Electronic Warfare
    - More reliance on Service-based analysis (within natural domains)
    - Lower tolerance for organic capabilities beyond Service core-competencies (e.g. stovepipes, Service-unique programs)
  - Format changes (ACAT or JPD level views)
- Probable
  - Clarified “roles and missions” for COCOMs, Services, and especially Reserve Components
  - More focus on prioritization of individual capability gaps, enabling “trades” – requires “top-down” weighting of DOD missions
  - Less focus on prioritization of capability areas



# QUESTIONS?

robert.valin@js.pentagon.mil

703-692-3889



# BACKUP

- LtGen (Ret) Van Riper (11 Dec 05)
  - “... today JCIDS evidences all the signs of an overly bureaucratic and procedurally focused process ...”
  - “... damaged the military lexicon ...”
  - “... a truly useful military operating concept only results when there is a need to solve a significant problem ... perform some military function better or in a new way.”
  - “a ‘revolution in military affairs’ or a ‘military transformation’ ... now serve as a mantra for those advocating advanced technologies”
  - “... concepts to justify directly ... every programmatic decision ...”
  - “seem to serve more as a means to slow innovation”
  - “lack of intellectual content in emerging joint concepts ... assigning our best thinkers to infuse content into vacuous slogans ... none more egregious that the idea of ‘effects-based operations’”
  - “Effects-based Operations ... not useful against ‘interactively complex systems’” (e.g. economic and leadership systems)
  - “... senior joint and service leaders must clearly identify the most significant problems ...”

# *The Munitions Requirements Process (MRP)*

- Tied to PPBE
  - Two-year effort
  - Process: A Simple View
    - OSD Policy and AT&L determine scenario list for enhanced review/analysis
    - DIA develops threat (near-term and future)
    - COCOMs develop near-term plans for listed scenarios
    - Joint Staff develops future plans for listed scenarios
    - Services develop individual munitions requirements
    - Risk Assessments by Services, COCOMs, Joint Staff, and OSD
- Tied to QDR's Force Planning Construct
  - Traditional surge scenarios tend to be munitions “drivers”
  - Service munitions investments driven by needs in defined scenarios
- Munitions are typically not bought to full requirement
  - Shorter lead-time than many other needs, but not insignificant
  - Lesser impact on other force elements (force size, readiness, etc.)

# QDR: Operationalizing the Strategy

- Defend the Homeland
  - Steady-state – detect, deter, and if necessary, defeat external threats to the U.S. homeland, and enable partners to contribute to U.S. national security.
  - Surge – contribute to the nation's response to and management of the consequences of WMD attacks or a catastrophic event.
- Prevail in the War on Terror *and* Conduct Irregular Operations
  - Steady-state – deter and defend against external transnational terrorist attacks, enable partners through integrated security cooperation programs, and conduct multiple, globally distributed irregular operations of varying duration.
  - Surge – conduct a large-scale, potentially long duration irregular warfare campaign including counterinsurgency and security, stability, transition and reconstruction operations.
- Conduct and Win Conventional Campaigns
  - Steady-state – deter inter-state coercion or aggression through forward deployed forces, enable partners through theater security cooperation, and conduct presence missions.
  - Surge – wage two nearly simultaneous conventional campaigns (or one conventional campaign if already engaged in a large-scale, long-duration irregular campaign), while selectively reinforcing deterrence against opportunistic acts of aggression. Be prepared in one of the two campaigns to remove a hostile regime, destroy its military capacity and set conditions for the transition to, or for the restoration of, civil society.