Weapons Capability Portfolio

Chuck Kelly

OUSD(AT&L)

Land Warfare & Munitions

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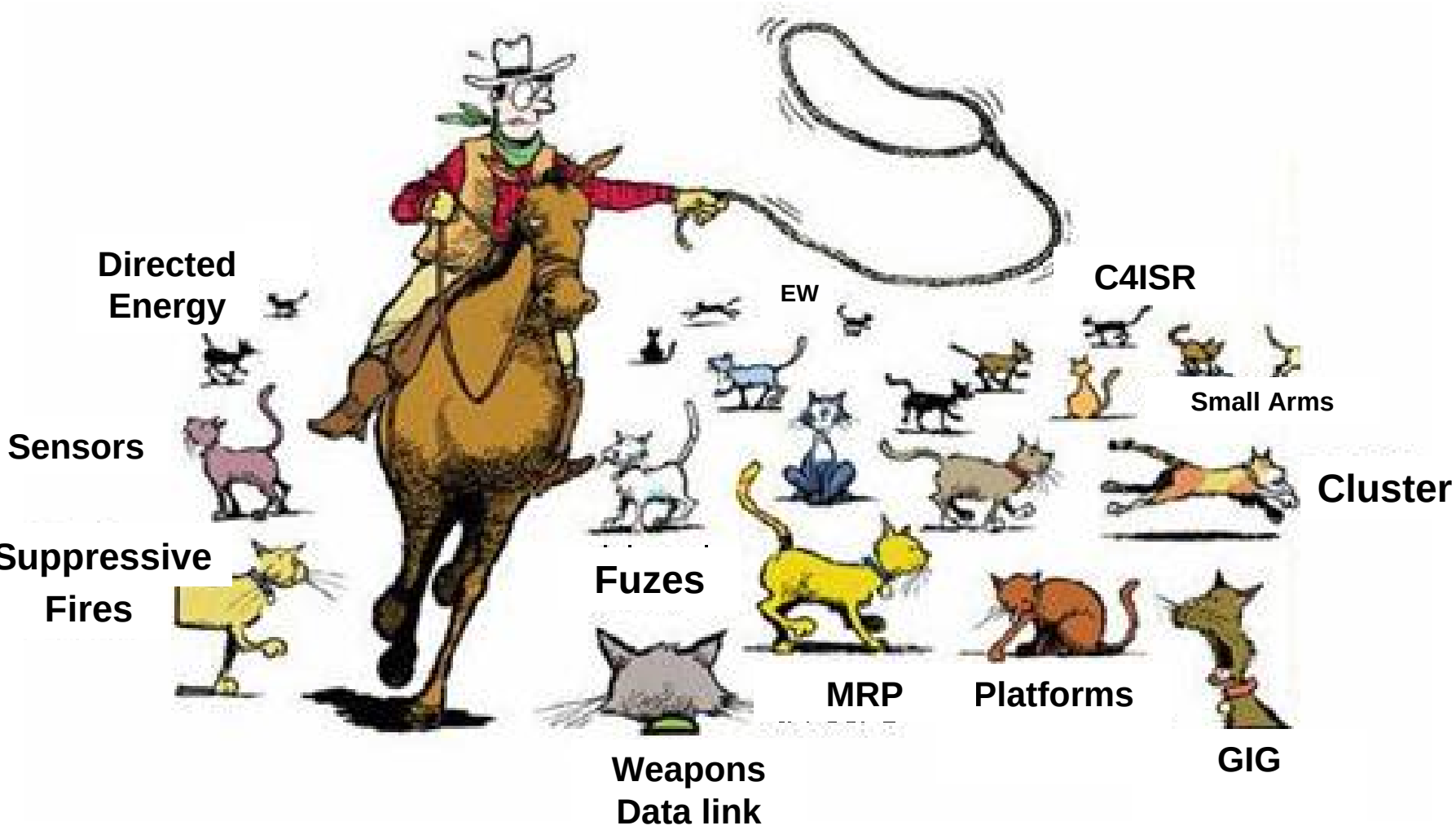
OUSD(AT&L)/A&T/PSA/LW&M
Room 5C756
3090 Defense Pentagon
Washington, DC 20301-3090

(703) 695-1772
DSN 225-1772
charles.kelly@osd.mil

What's In the Portfolio?

- **Highly Precise Munitions**
- **Not so Precise Munitions**
- **"Volume Fire" Munitions**

Assessing the Portfolio



Agenda

- AT&L Perspective
- Budget Trends
- Assessing the Portfolio
  - Proficiency
  - Sufficiency
- Road Ahead

Secretary of Defense
Hon. Robert Gates

Deputy Secretary of Defense
Hon. Gordon England

Under Secretary of Defense for Acquisition, Technology & Logistics
Hon. John Young

Principal Deputy : Vacant

Secretary of the Army
Hon. Pete Geren

Secretary of the Navy
Hon. Donald Winter

Secretary of the Air Force

DUSD(Acquisition & Technology)
Hon. James Finley

Director, Portfolio Systems Acquisition
Mr. Dave Ahern

Land Warfare & Munitions
Mr. Tony Melita

USD (AT&L) Strategic Thrusts

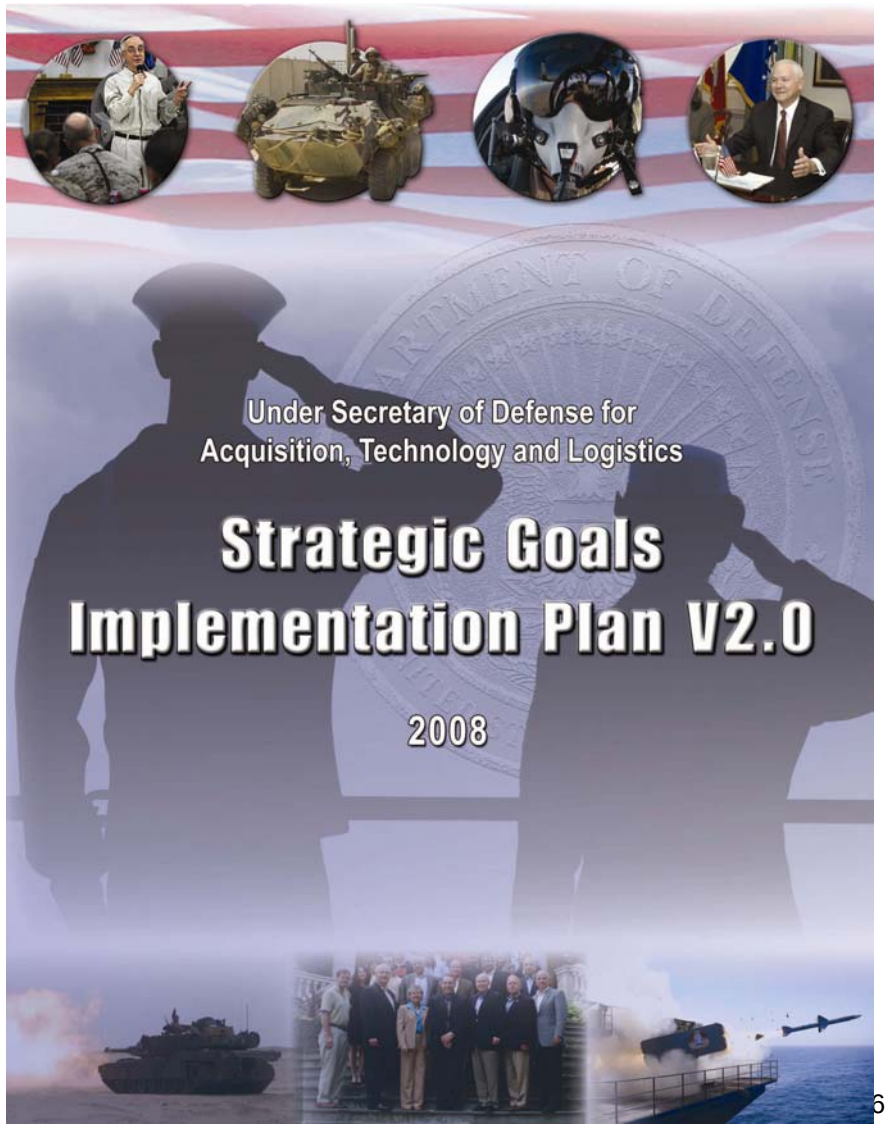
Strategic Thrust 1 – Define Effective and Affordable Tools for the Joint Warfighter

Strategic Thrust 2 – Responsibly Spend Every Single Tax Dollar

Strategic Thrust 3 – Take care of our people

Strategic Thrust 4 – DoD Transformation Priorities

Warfighter is #1 Focus – Need to Understand Operational Concepts & Needs to:
- Guide Technology
- Design Effective Systems
- Provide Logistics and Facility Support



http://www.acq.osd.mil/goals/

Strategic Thrust 1

- **Outcomes**
  - New programs are born joint, interoperable, and affordable
  - Opportunities are constantly identified to deliver greater enterprise efficiencies
  - **Roadmaps guide development and integration of programs in portfolio areas**
  - Cost to the Defense Enterprise is continuously reduced

Strategic Thrust 1 Roadmap Metrics

- **Initiate a Joint Weapons JAT and develop Joint Weapons Roadmap Version 1.0 focused on weapons capability investment strategies beyond POM10.**

- **Initiate an Electronic Warfare JAT … focus coordinating EW investment options for POM 10.**

- **Initiate Directed Energy JAT and deliver Roadmap Version 1.0.**

Budget Trends

Figure 1-1 Updated

Past and Projected Funding for Defense

(Billions of 2008 Dollars of Total Obligational Authority)

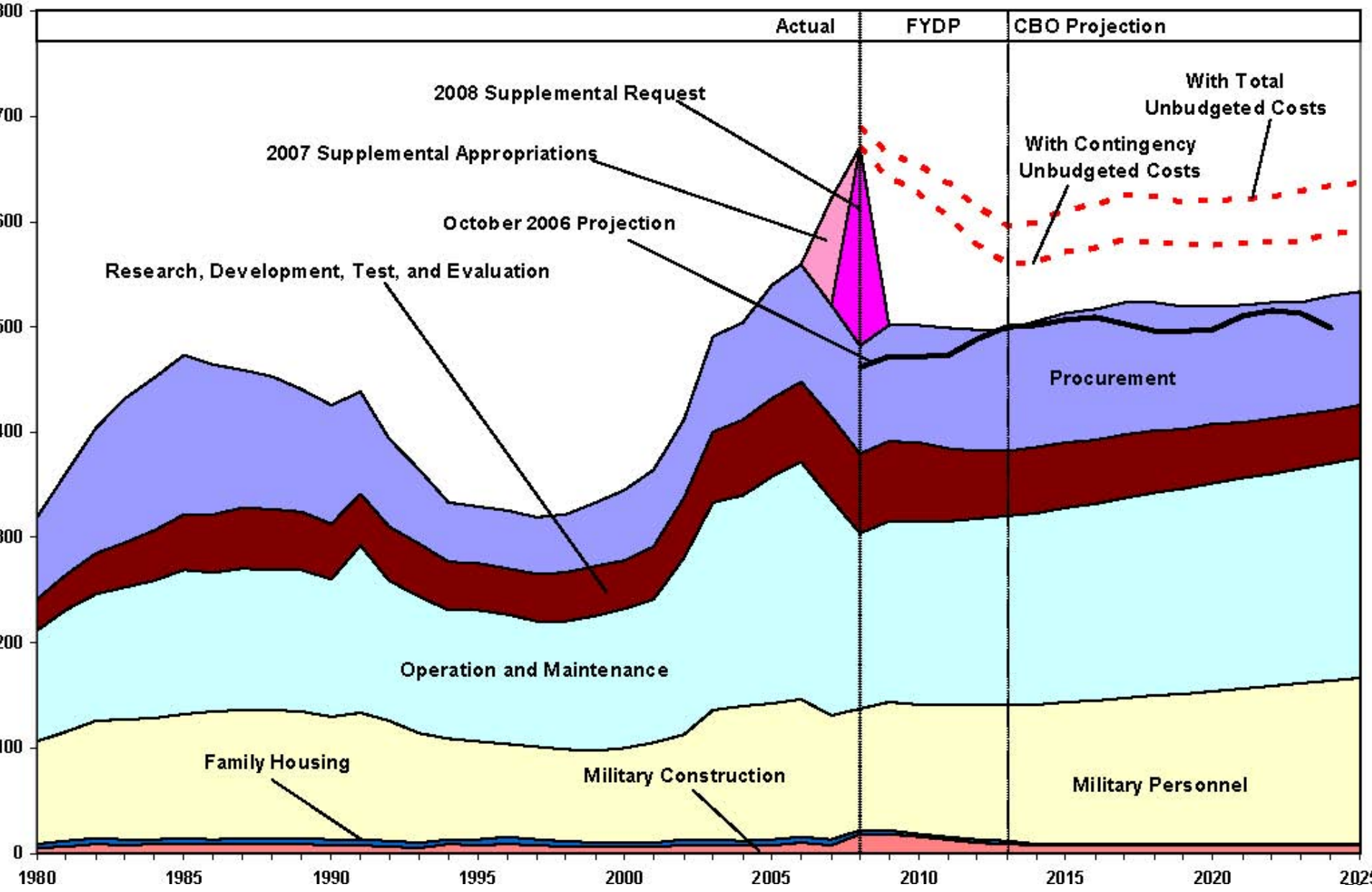
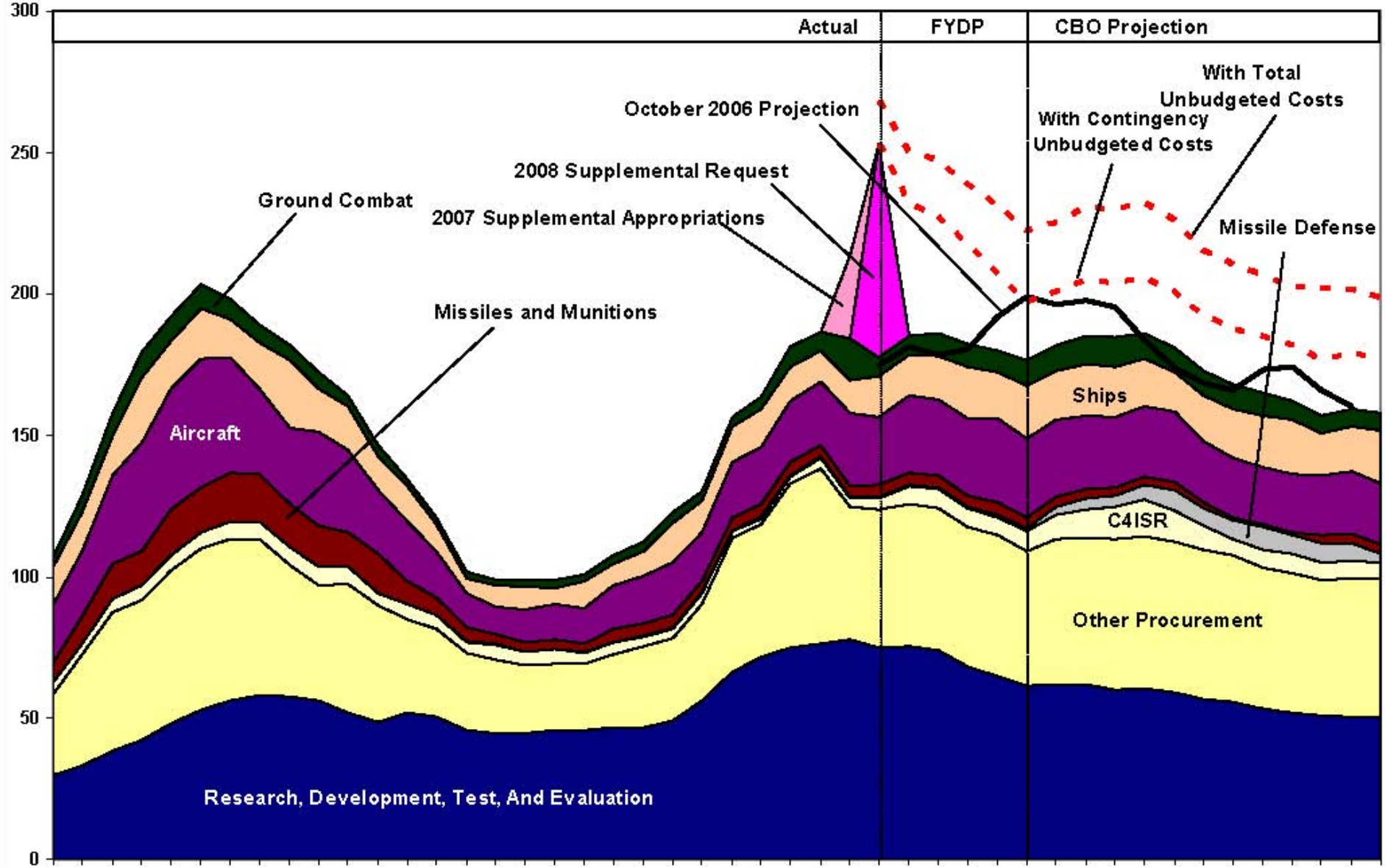


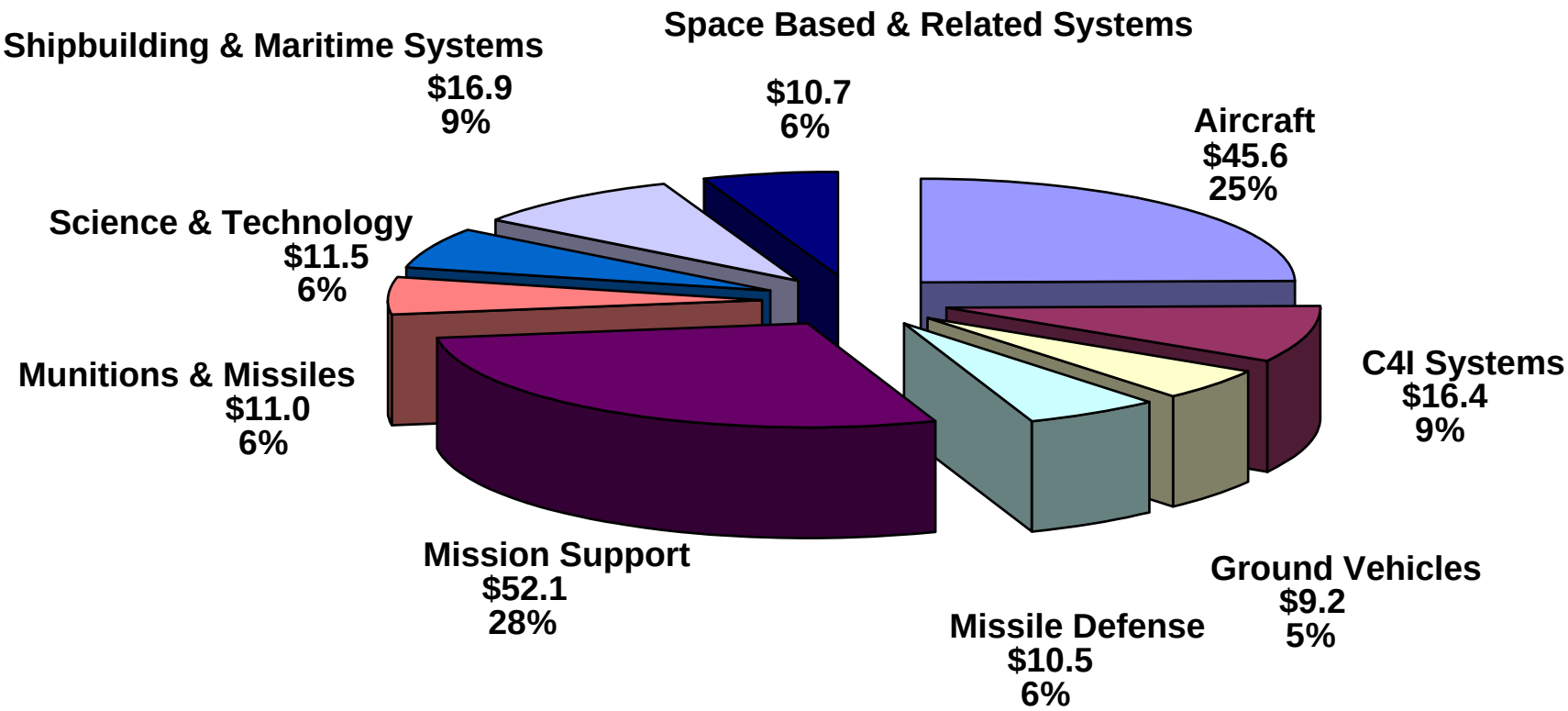
Figure 3-1 Updated

Funding for Investment, by Budget Account and Weapon Type

(Billions of 2008 Dollars of Total Obligational Authority)

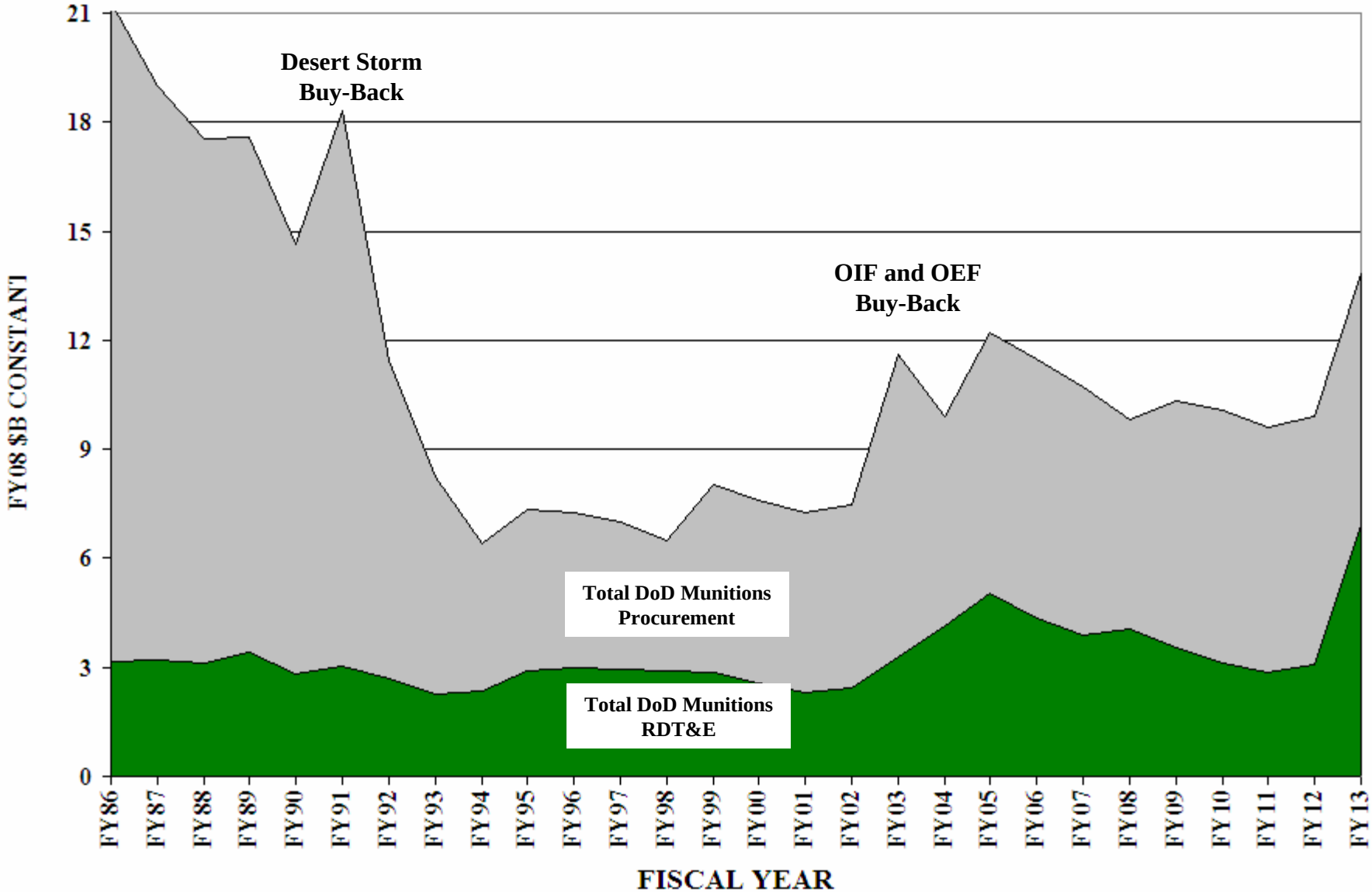


FY 2009
Strategic Modernization Breakdown

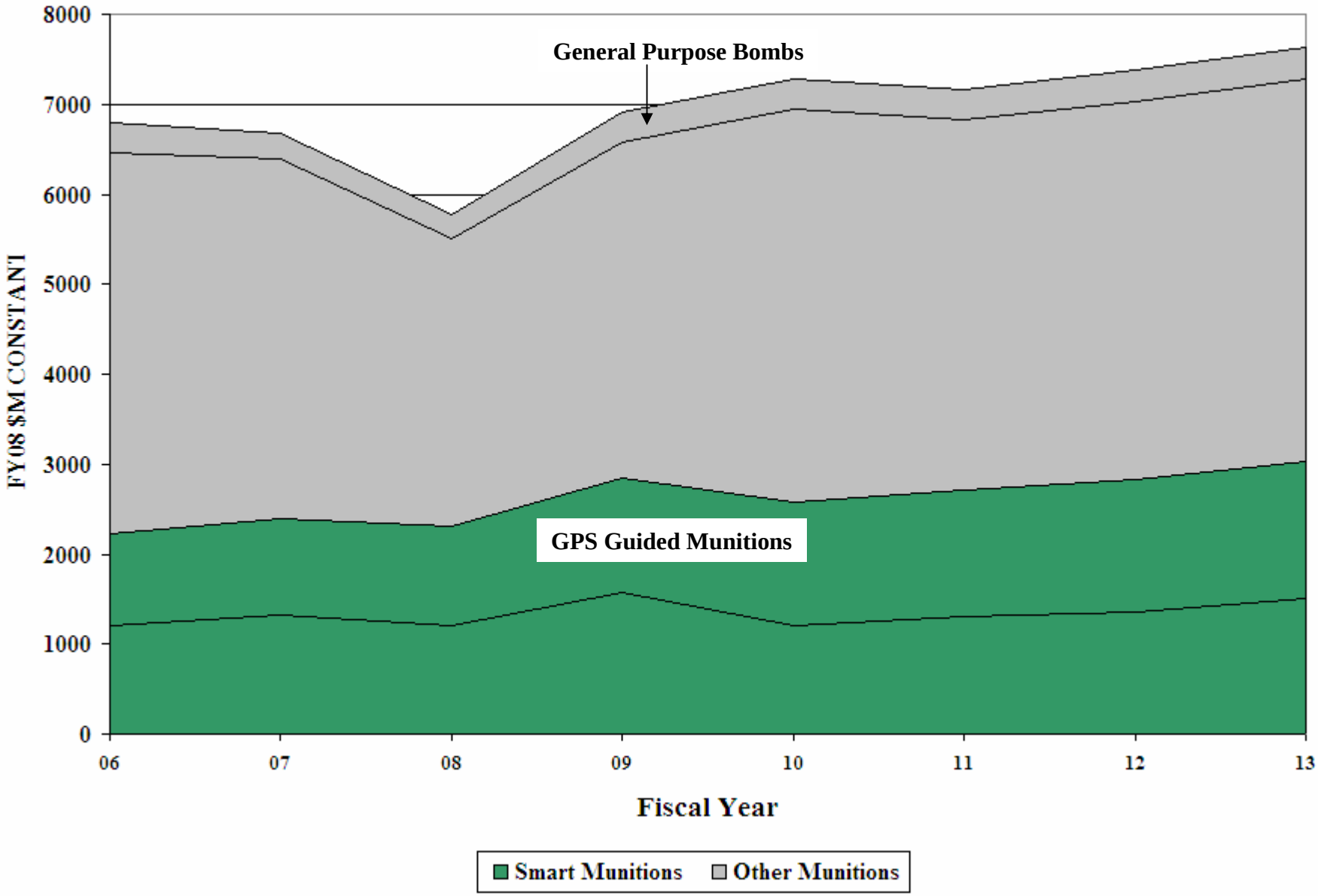


Total Budget $183.8B

DoD Munitions RDT&E and Procurement

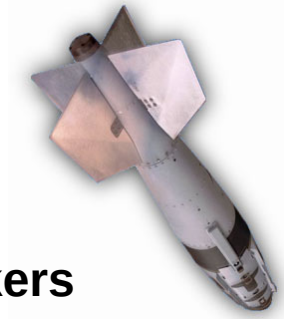


Smart Munitions vs. Other Munitions Procurement Trend



Move to Precision

- **AIR**
  - **Dumb bombs to smart bombs**
  - **Unguided rockets to guided rockets**
  - **Single mode seekers to multi-mode seekers**



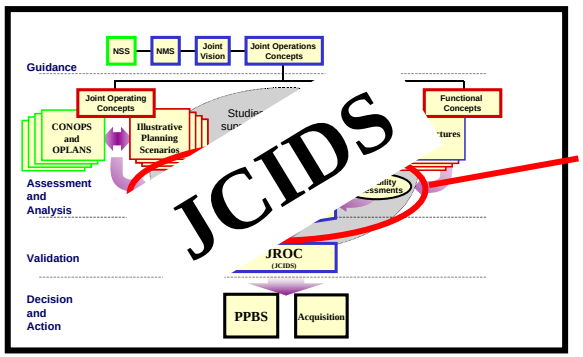
- **Ground**
  - **Ballistic artillery to guided artillery**
  - **Unguided rockets to guided rockets**
  - **Precision mortars**

- **Maritime**
  - **Unguided surface fires to guided fires**

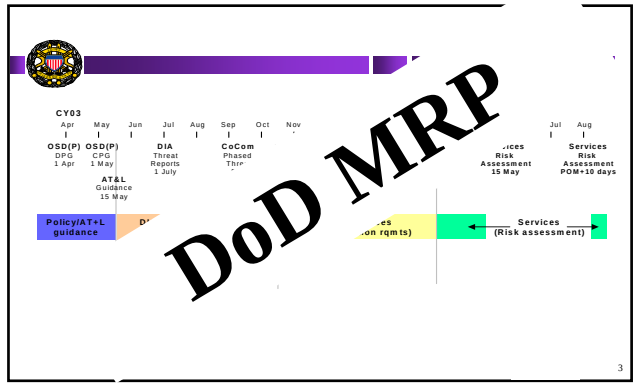
What / How Much Do We Buy?

Two Munitions Processes

Proficiency



Sufficiency

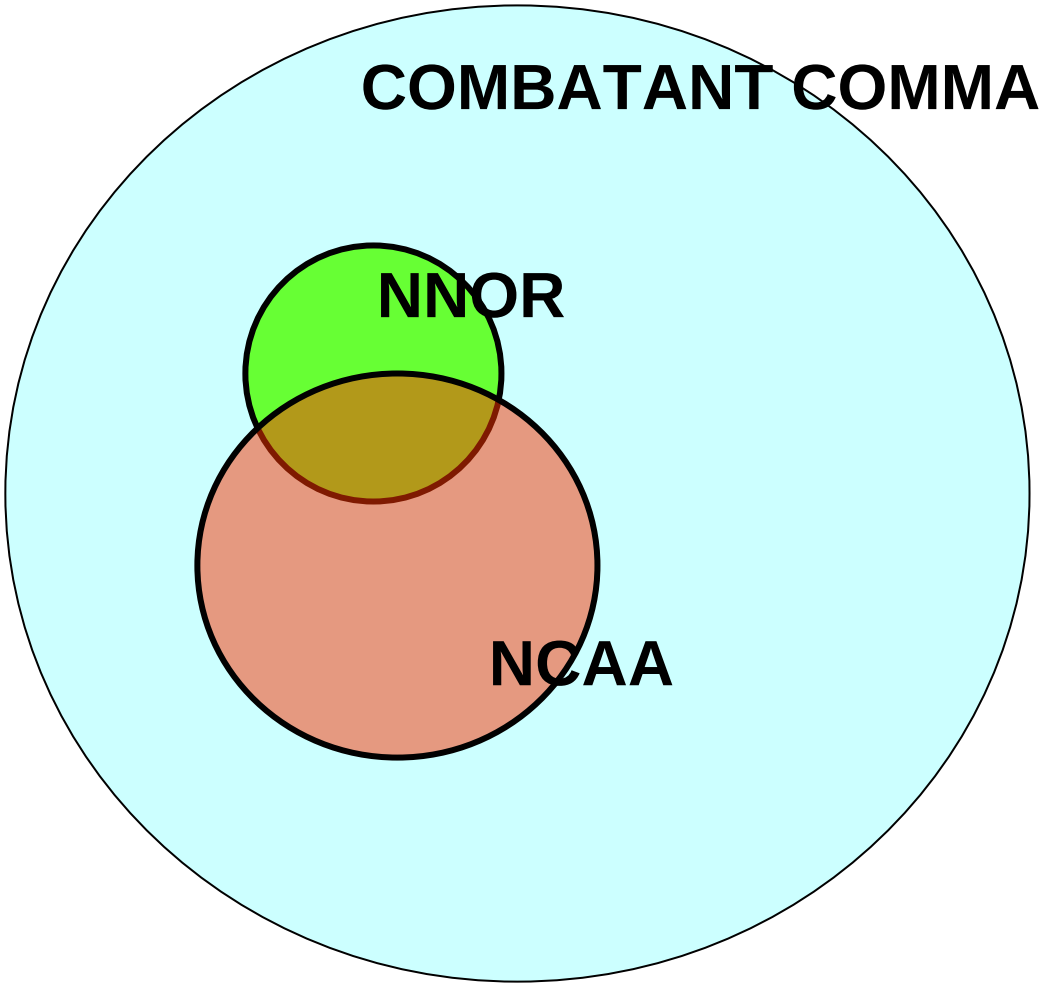


"WHAT DO WE BUY?"	Purpose	"HOW MUCH OF EACH DO WE BUY?"
JCIDS	Driver	PPBES
3170.1C	Implementing Doc	3000.4
Capability Based	Basis	Threat Based

Proficiency Factors

- **Targets Effects Desired**
- **Threat Environment**
- **Domain Requirements**
- **Target Environment**

Identify Targets

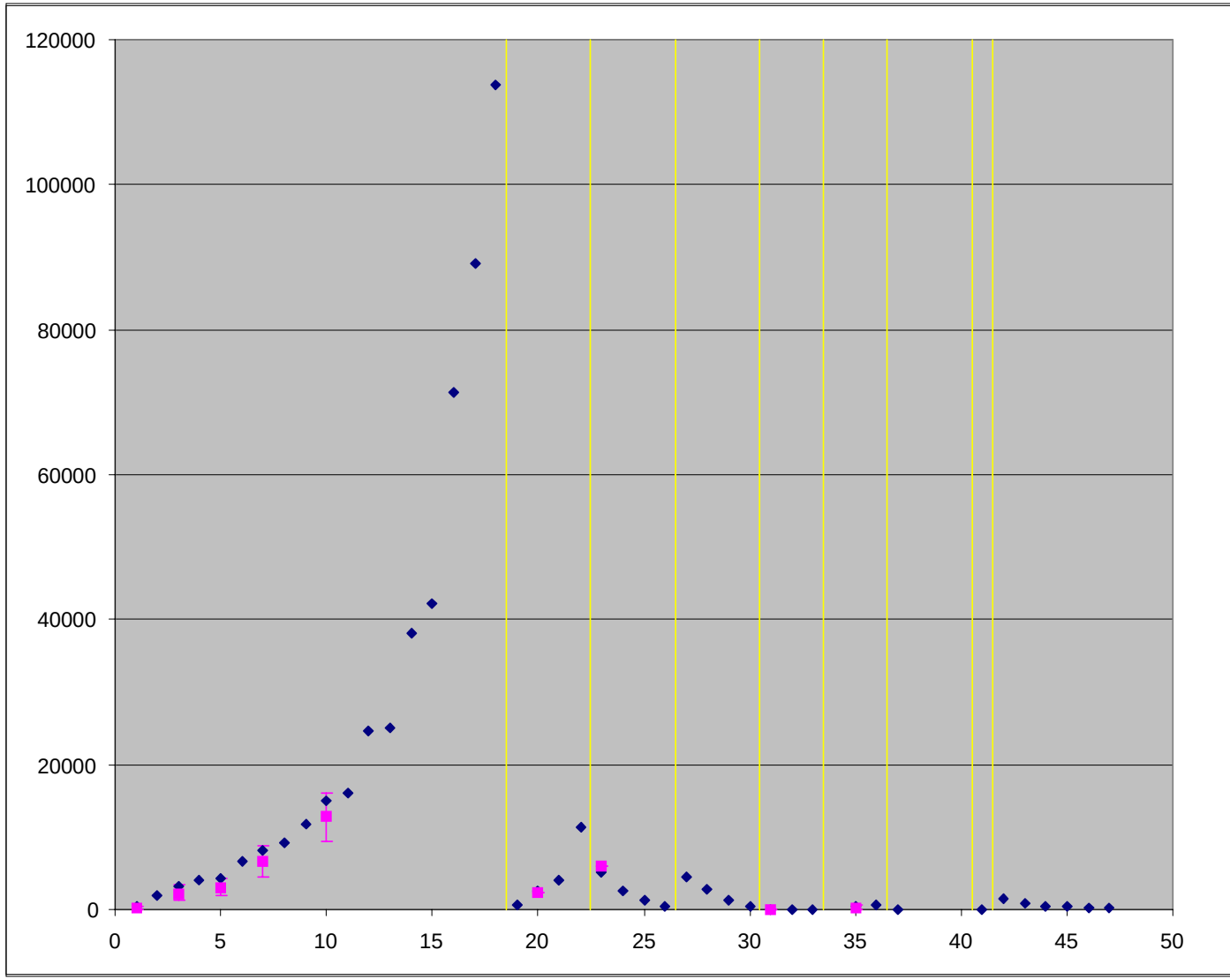


SMALLER YET COMPREHENSIVE LIST TO ASSESS GAPS

Traditional Target Vulnerabilities

Desired Effects:

- **Blast**
- **Frag**
- **Crater**
- **Structure**



Non-Traditional Target Effects

- **Non-Kinetic – I/O & EW**
- **Non-Lethal**

Layered Capabilities & Confidence Factor?

CP Tasks	CM Tasks
• Deny Access Into/Out of an Area to Individuals	• Stop Vehicle • Disable Vehicle
• Move Individuals Through an Area	• Stop Vessel • Disable Vessel
• Disable Individuals	• Stop Fixed-Wing Aircraft on the Ground • Disable Aircraft on the Ground • Divert Aircraft in the Air
• Suppress Individuals	• Deny Access to Facility

Threat Environment

Direct Attack

In Close

Outside Point Defense

Outside Area Defense

Outside Theater Defense

LOS | BLOS

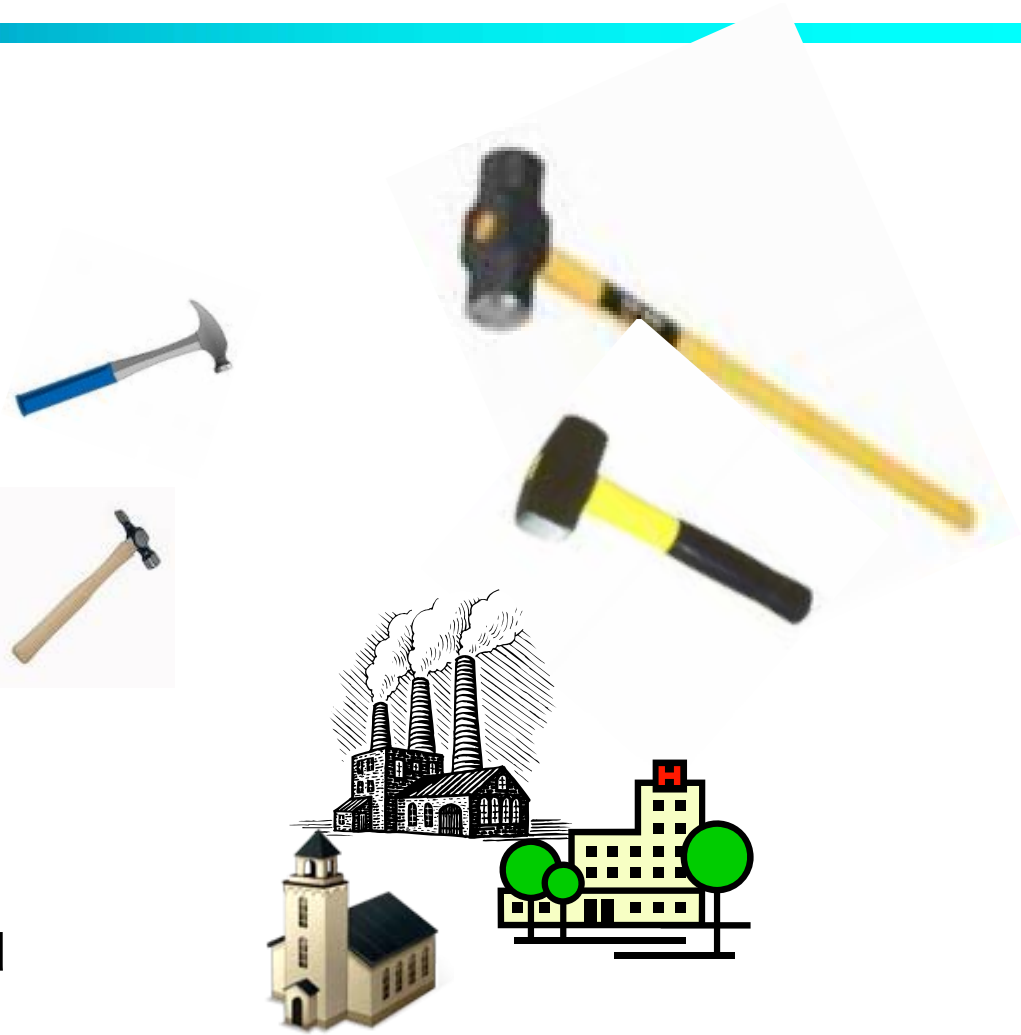
Domain Requirements

- Air
  - Bomber
  - TacAir
  - Helo
- Ground
  - Direct Fire
  - Indirect Fire
- Maritime
  - Surface
  - Subsurface
- Cyber??

Overlap vs. Redundancy

Target Environment

- Enemies
- Friendlies
- Non Combatants
- Infrastructure
  - Power
  - Water
  - Transportation
  - Hospitals
- Effects – Desired / Undesired



Target Environment

SDB-FLM

MK-82-FLM

Low Collateral
&
MK-82

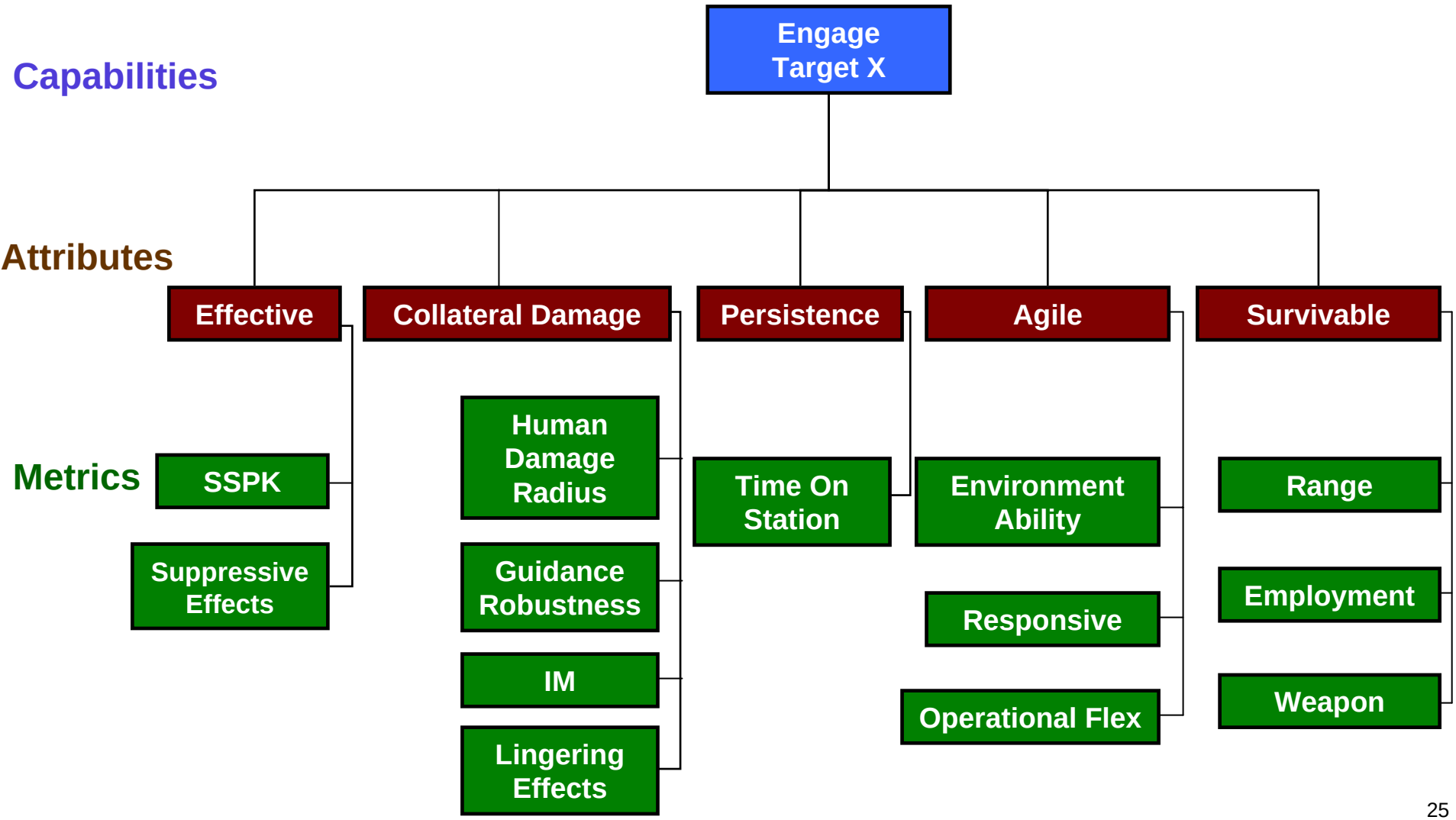
Practice
Bombs

=

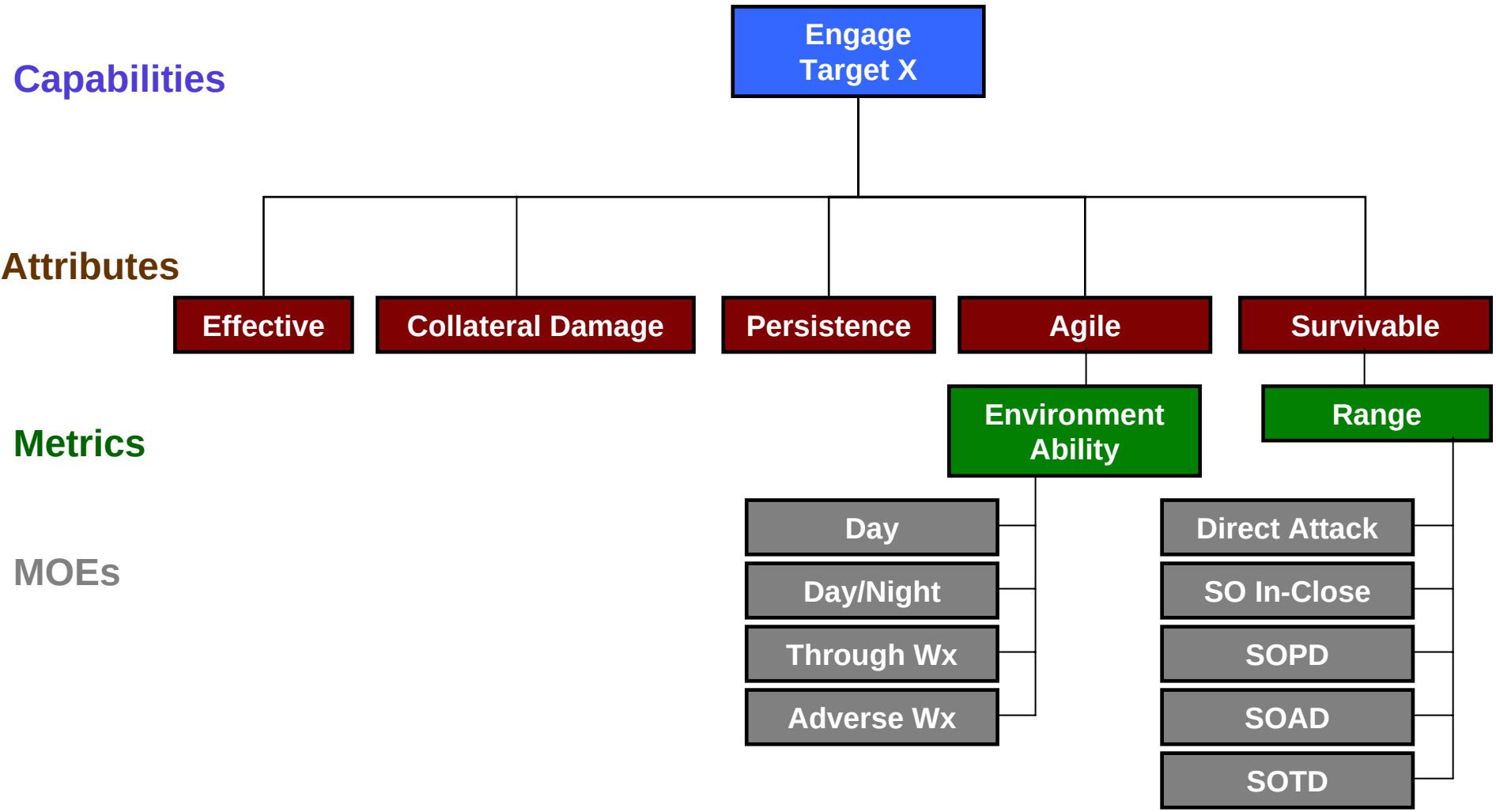
Dial A Yield

How Do We Capture Needs / Desires?

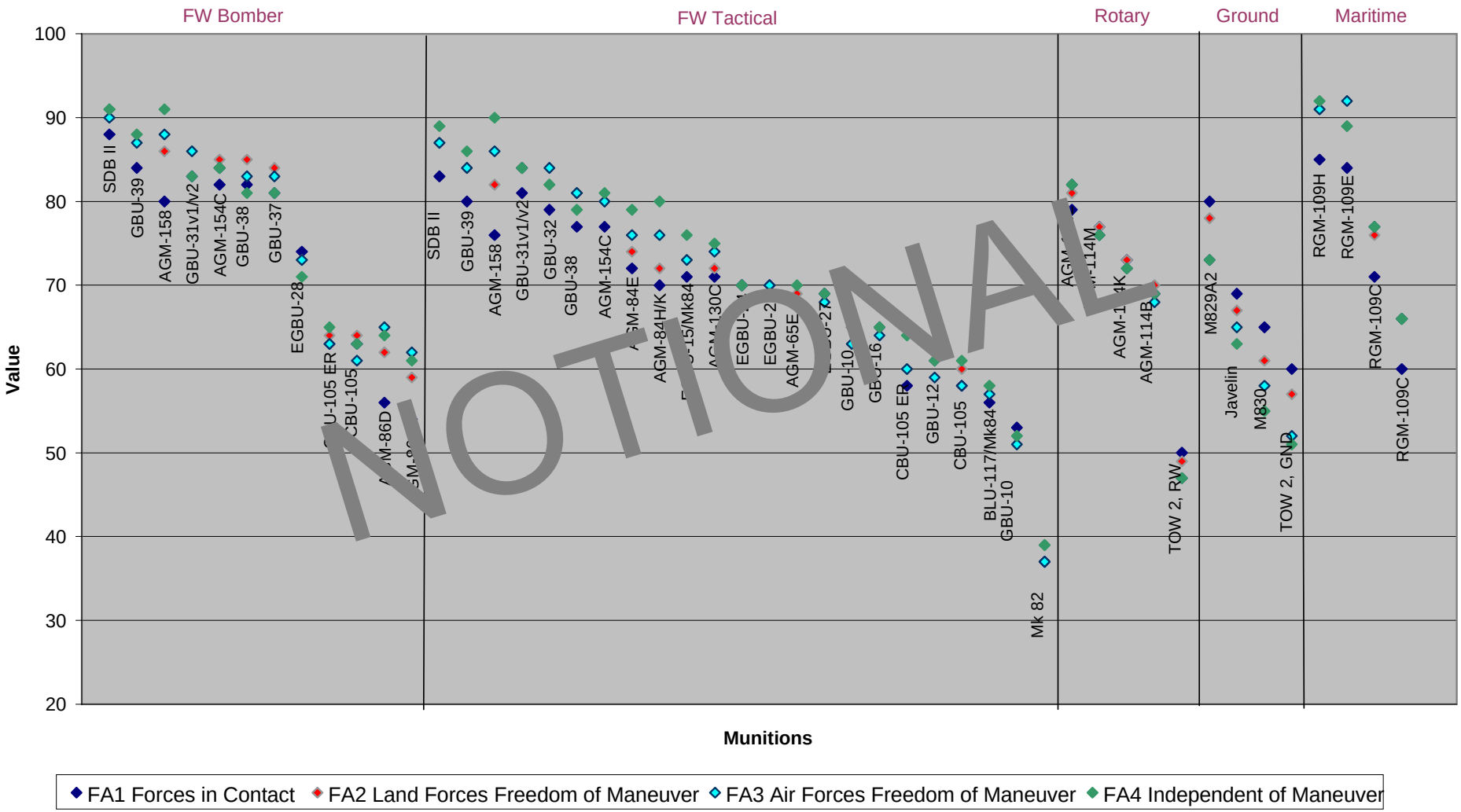
Weapon Attributes



Measures of Effectiveness

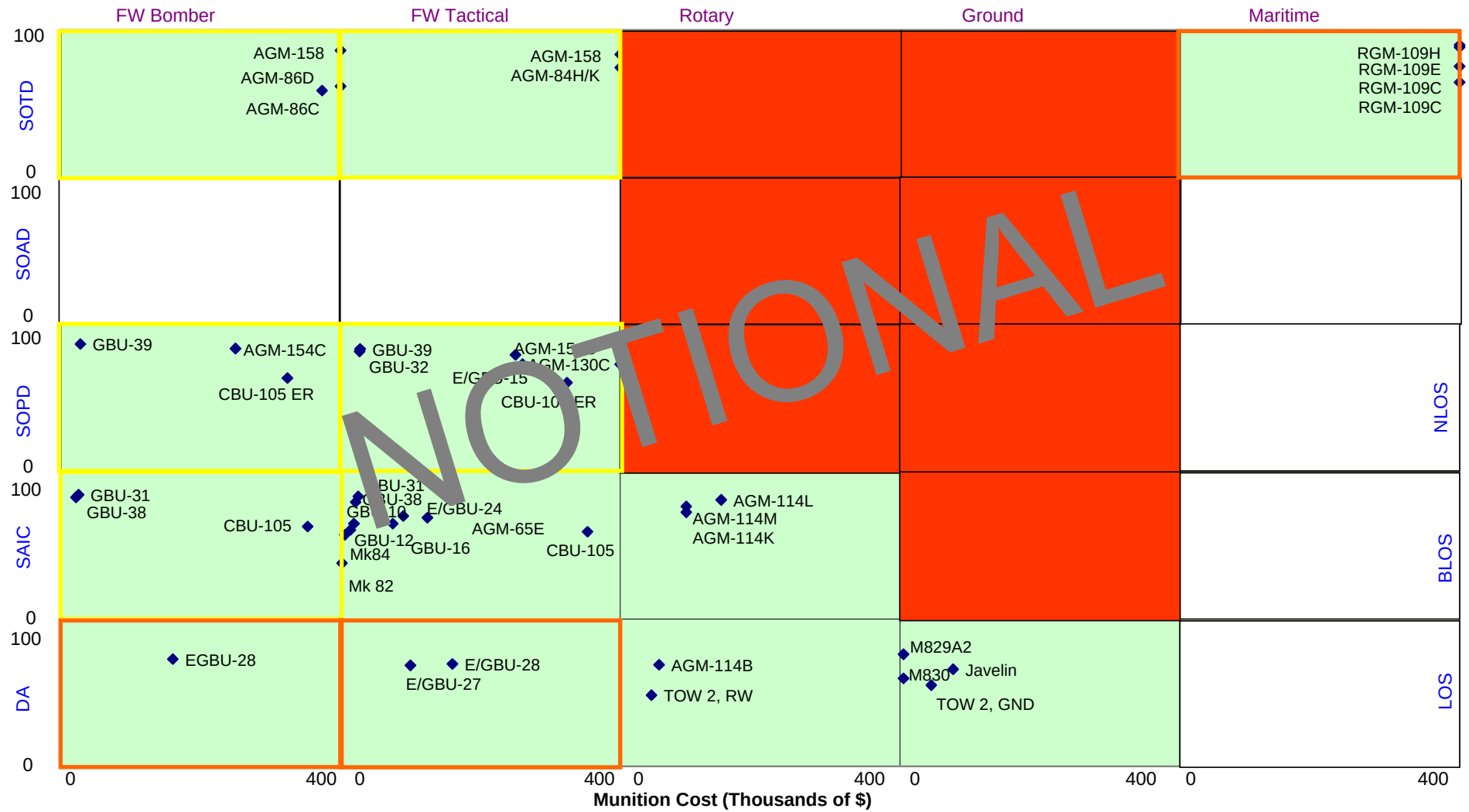


Domains

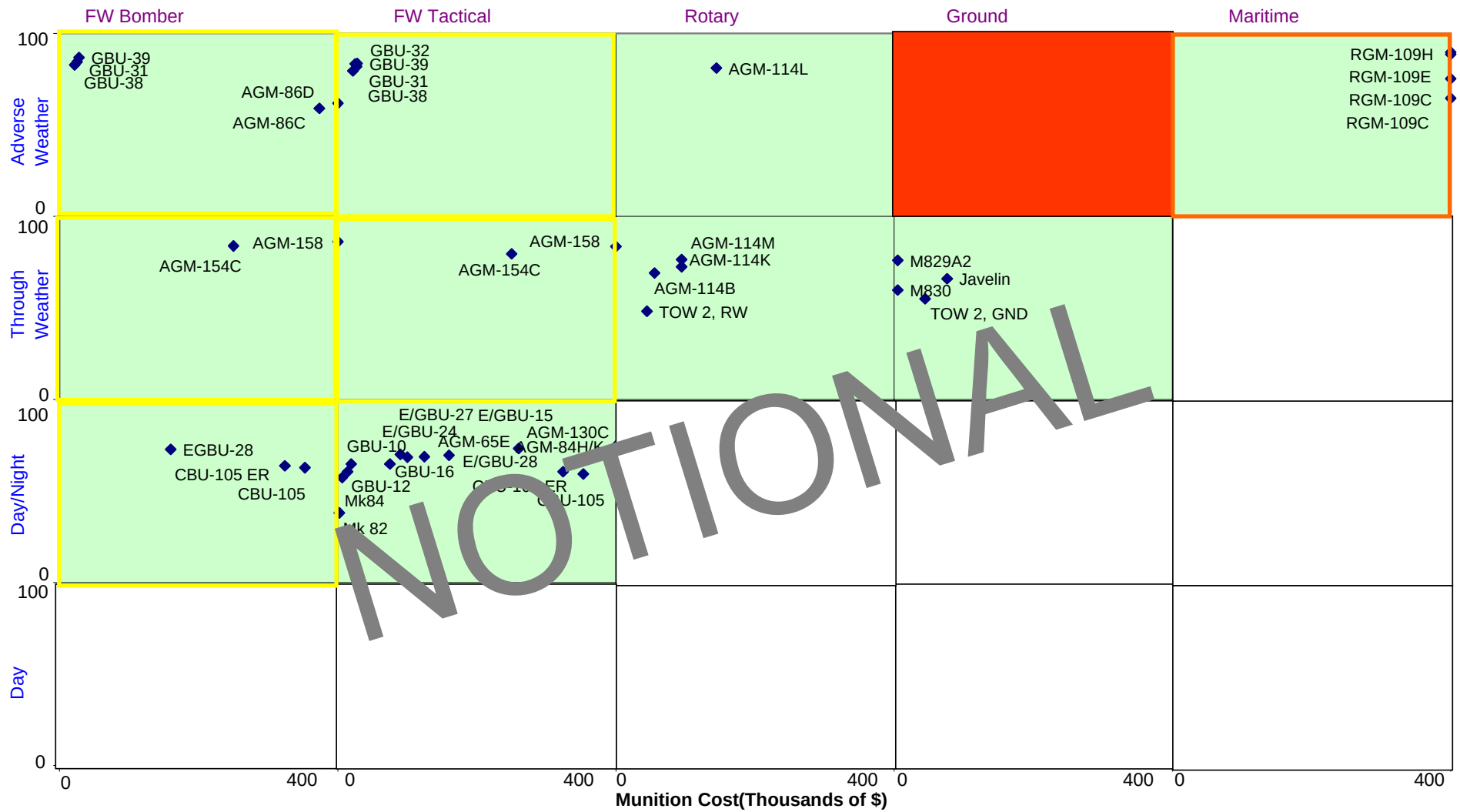


NOTIONAL

Capability - Range



Capability - Environment



Sufficiency

DoD Munitions Requirements Process

Threat Report

DIA

- Maneuver Forces
- Air
- Maritime
- IADS
- Infrastructure
- Strategic

CoCOM J8 WAD

Phased Threat Distribution

- Allies
- SOCOM
- USMC (Air& Ground)
- USA
- USN
- USAF
  - Phase I: *w%*
  - Phase II: *x%*
  - Phase III: *y%*
  - Phase IV: *z%*

Services

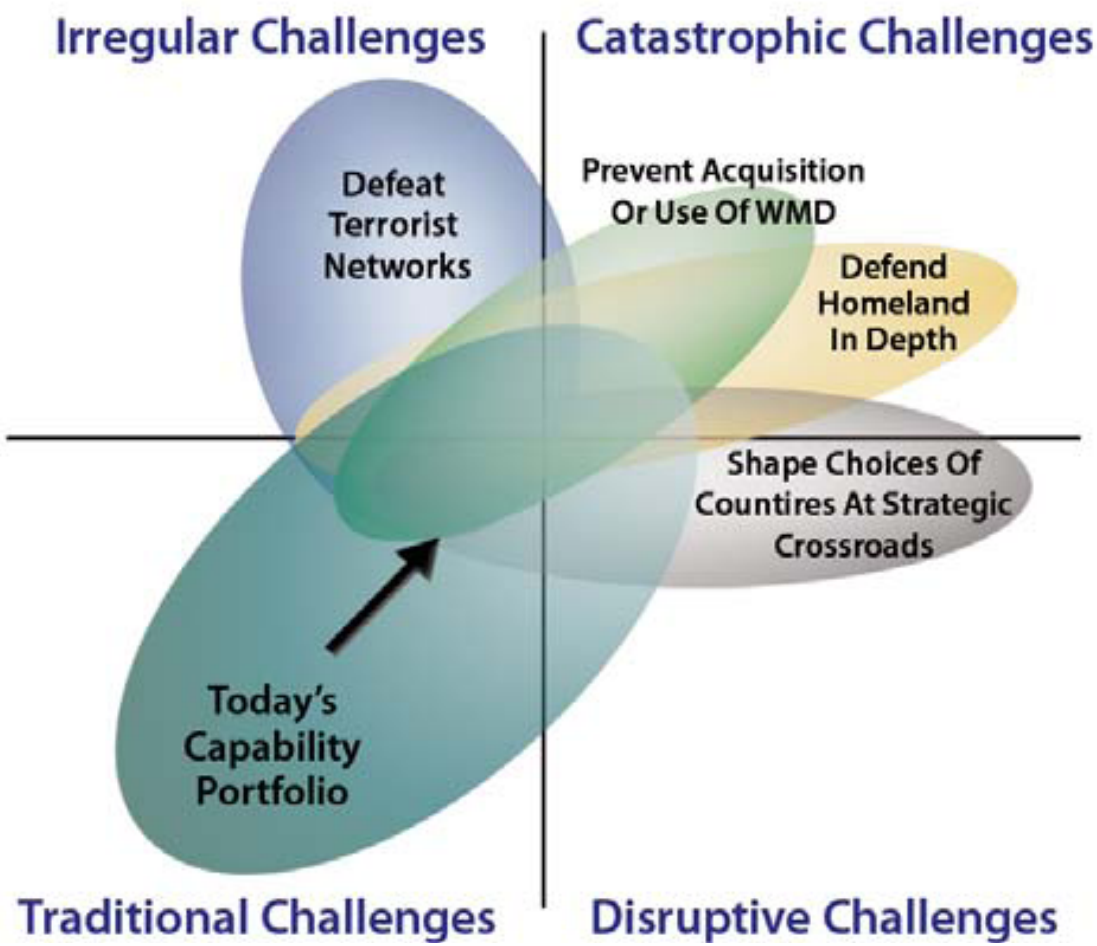
Service Processes

- NNOR
- NCAA
- QWARRM

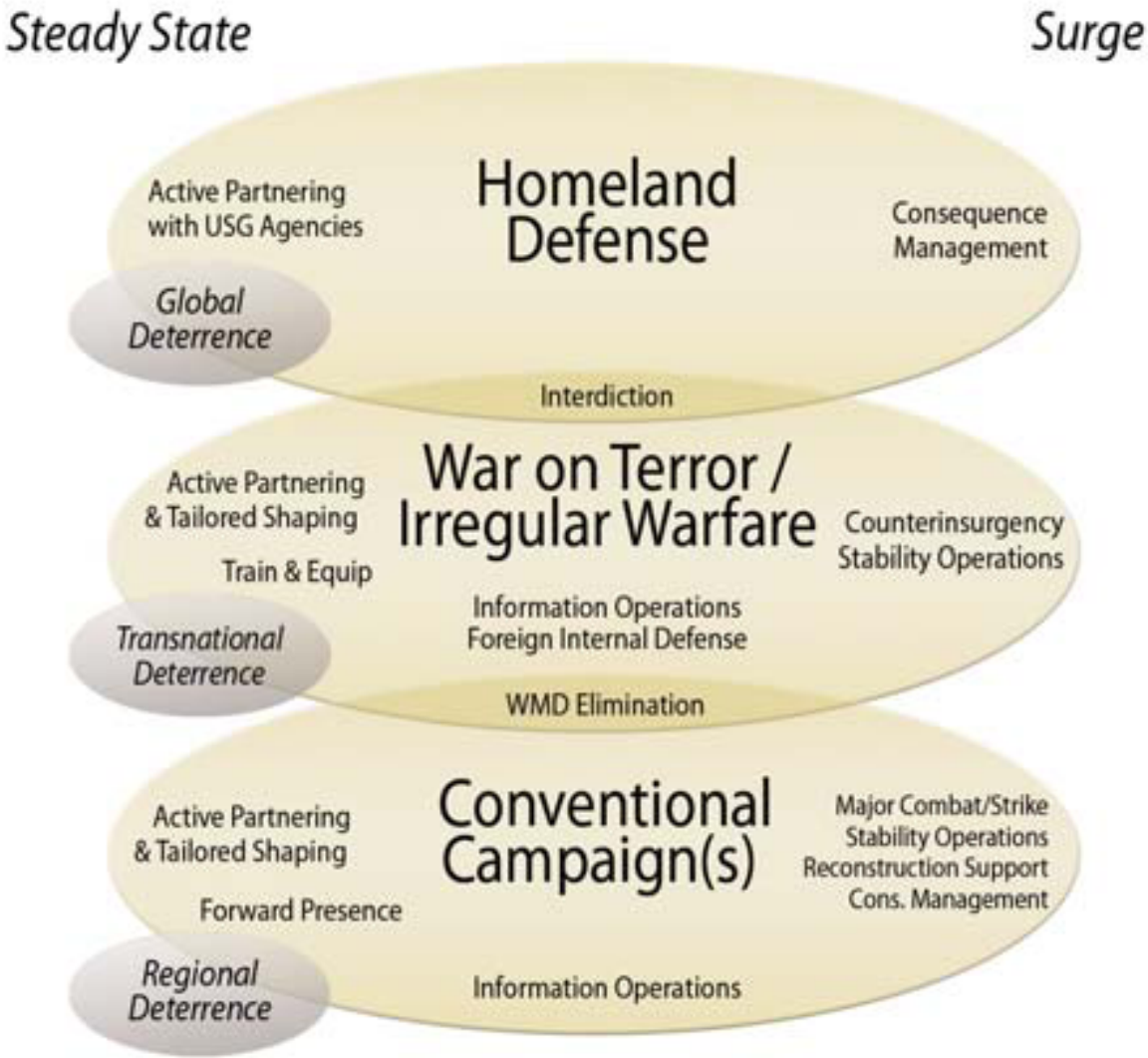
Total Munitions Requirement

- Combat Requirement
- Strategic Readiness Requirement
- Current Operations/Forward Presence Requirement
- Test & Training Requirement

Operationalizing the Strategy – 2006 QDR



Force Planning Construct – 2006 QDR



Danger

Road Ahead – The Challenges

- **Build & Update Roadmaps**
  - **Weapons**
  - **Directed Energy**
  - **Electronic Warfare**
  - **Non Lethal Weapons**

- **Improve Munitions Requirements Process**
  - **Incorporate Increased Transparency, Visibility, and Collaboration into DoD Instruction 3000.4 (MRP)**
  - **Ensure Credible Guidance (Policy and Joint Staff Collaboration)**

- **Maintain Visibility into Munitions Budgets**
  - **Address Priority Capabilities**
    - **Identify Gaps**
    - **Identify Redundancies**
  - **Address Capability "Balance" (Across Sensors, Platforms, & Munitions)**

Questions?

Hard Target Fuzing Challenges

Need to address HT related M&S, material properties, & testing

Issues:

- Harder Targets
- Weapon Response & Survivability
- Material Properties
  - Filler & Explosives

Fuze Well from Characterization Tests

Need for MRP

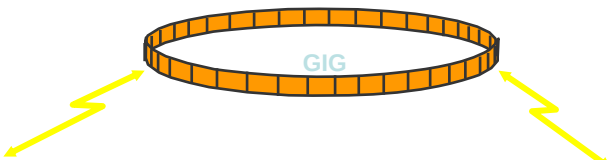
- Provides the foundation for credible Service inventory numbers.
  - Near Year requirement provides sanity check for stockpile positioning
  - Out Year requirement “sets the bar” for inventory build
    - Requirement is the driver for weapon purchases in FYDP
    - Requirement is the driver for establishing new weapon system acquisition programs
- Ensures the equities of all participants are addressed, i.e. CoCOMs, Joint Staff, Services, and OSD.
- Prevents multiple requirements from being generated, i.e. a separate CoCOM and Service munitions requirement (ensures BOTH requirements will be discredited).

FA Assessment—Scoping

- No Joint Fires⇒ Engagement - Kinetic – Lethal – EFFECTS

- **Integrated Systems - Required**
  - **F2T2EA Chain**

Need all 3 to engage—Following assessment is scoped to weapon only

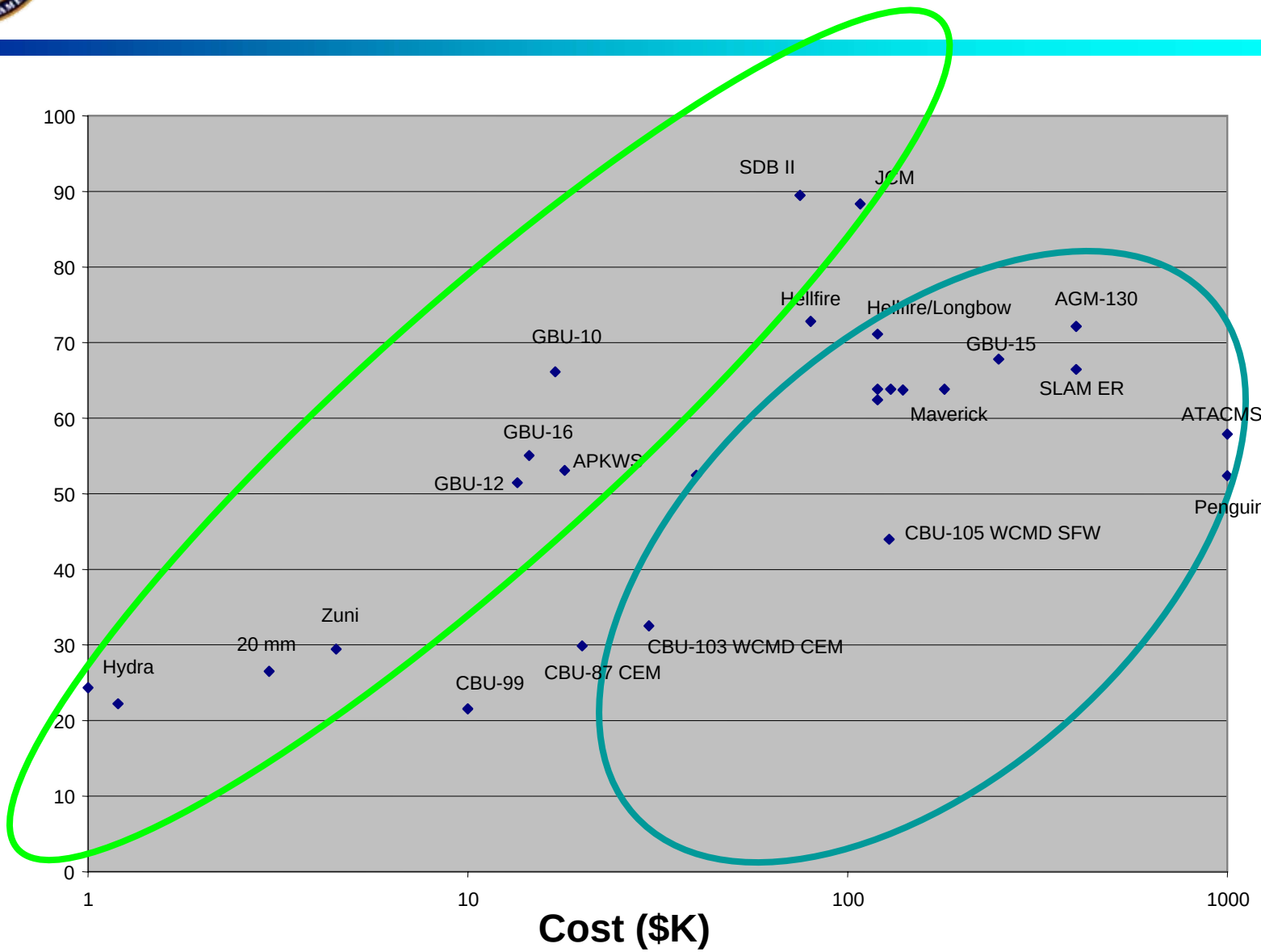


C2/BM

SENSORS

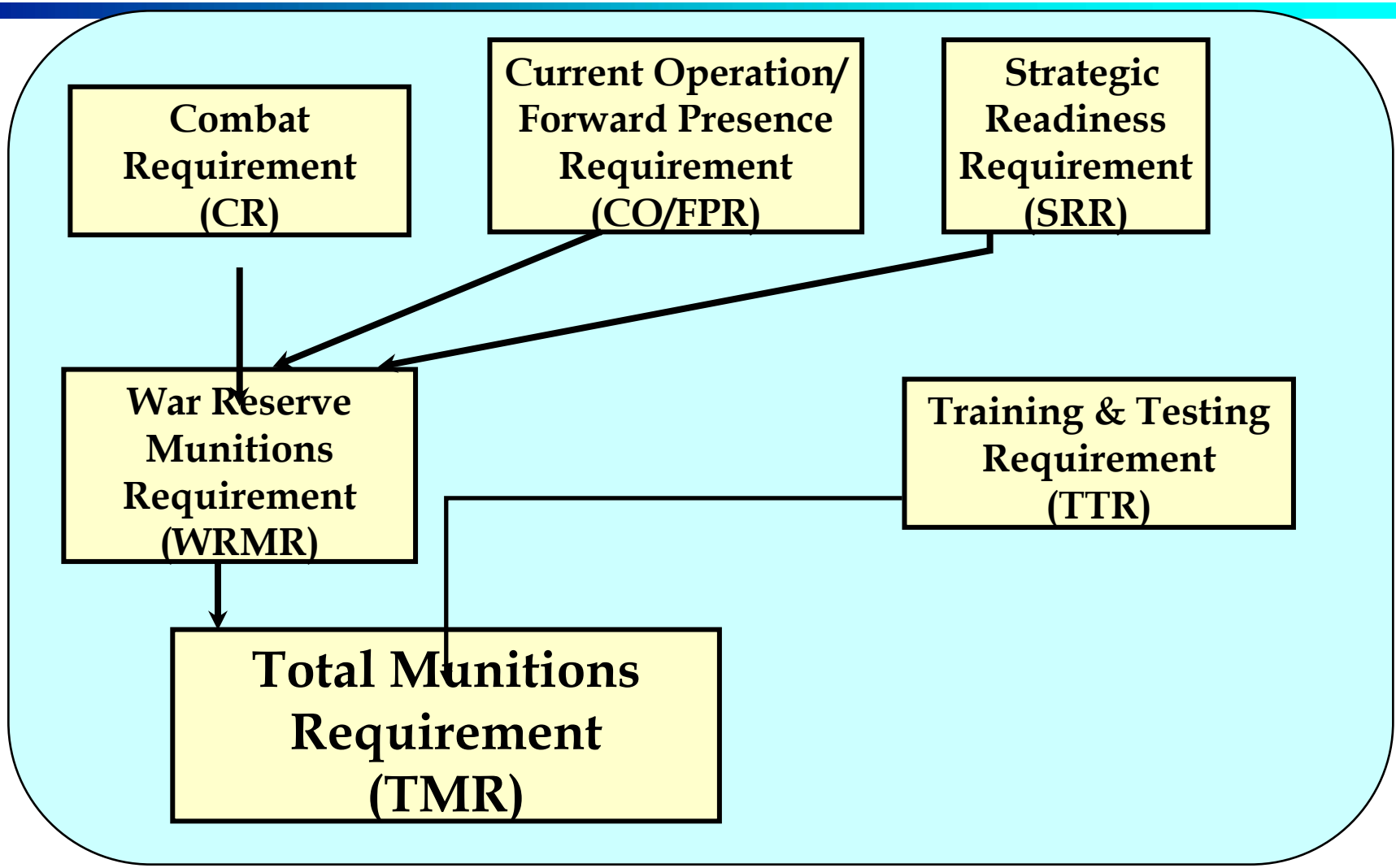
WEAPONS

Cost-Benefit Analysis



Questions/Comments????

DoD MRP Products



Terminology - Force Application Attributes

Effective – Able to precisely generate desired effects through a variety of kinetic and non-kinetic means in all environments.

Discriminating – Able to limit collateral damage and second order consequences of engagement.

Agile – Able to rapidly maneuver forces throughout all domains of the battlespace in all environments.

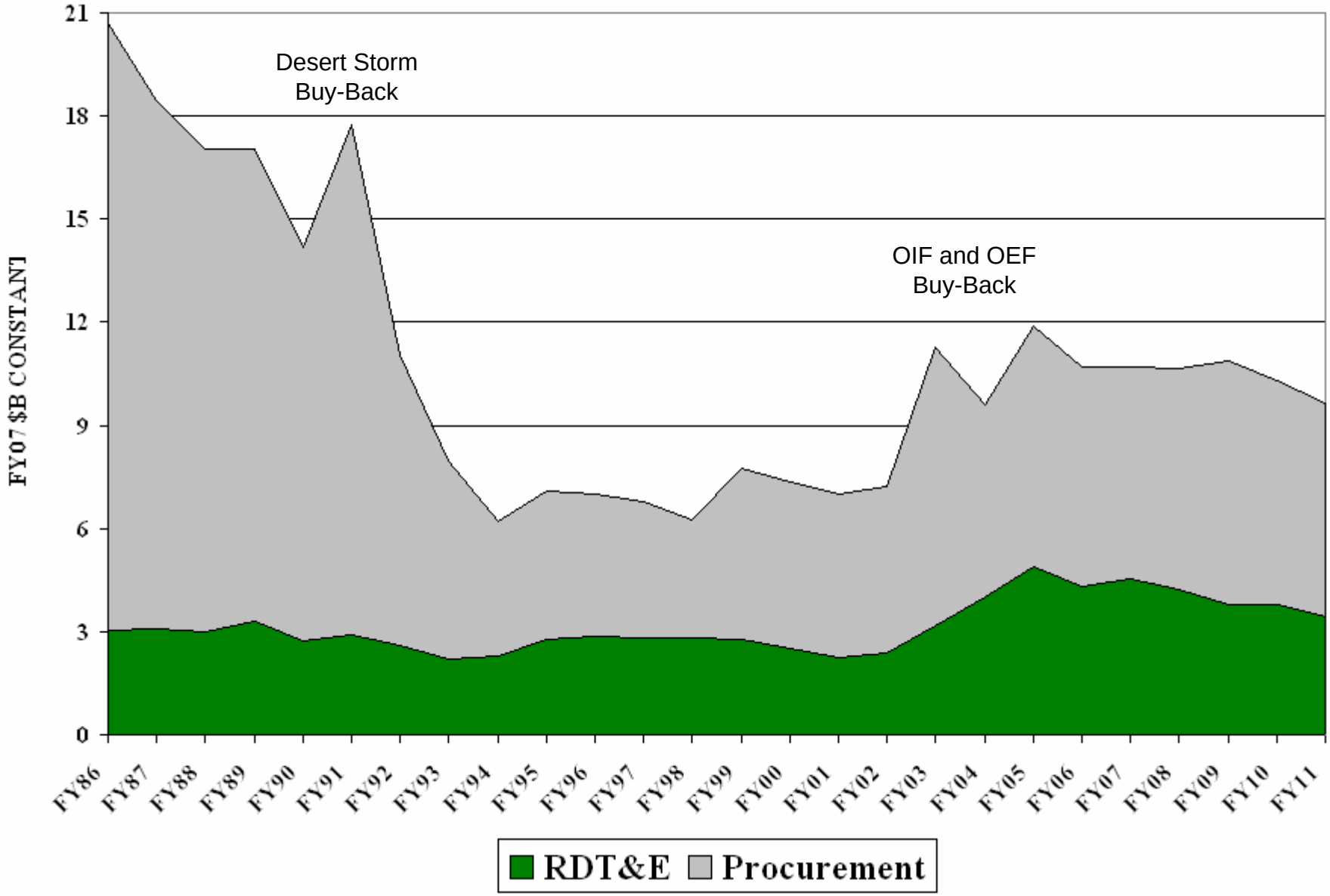
Survivability – Able to effectively maneuver and engage in a dynamic and uncertain threat environment.

Persistent – Able to apply the necessary force continuously and sustain those operations as required to meet mission objectives.

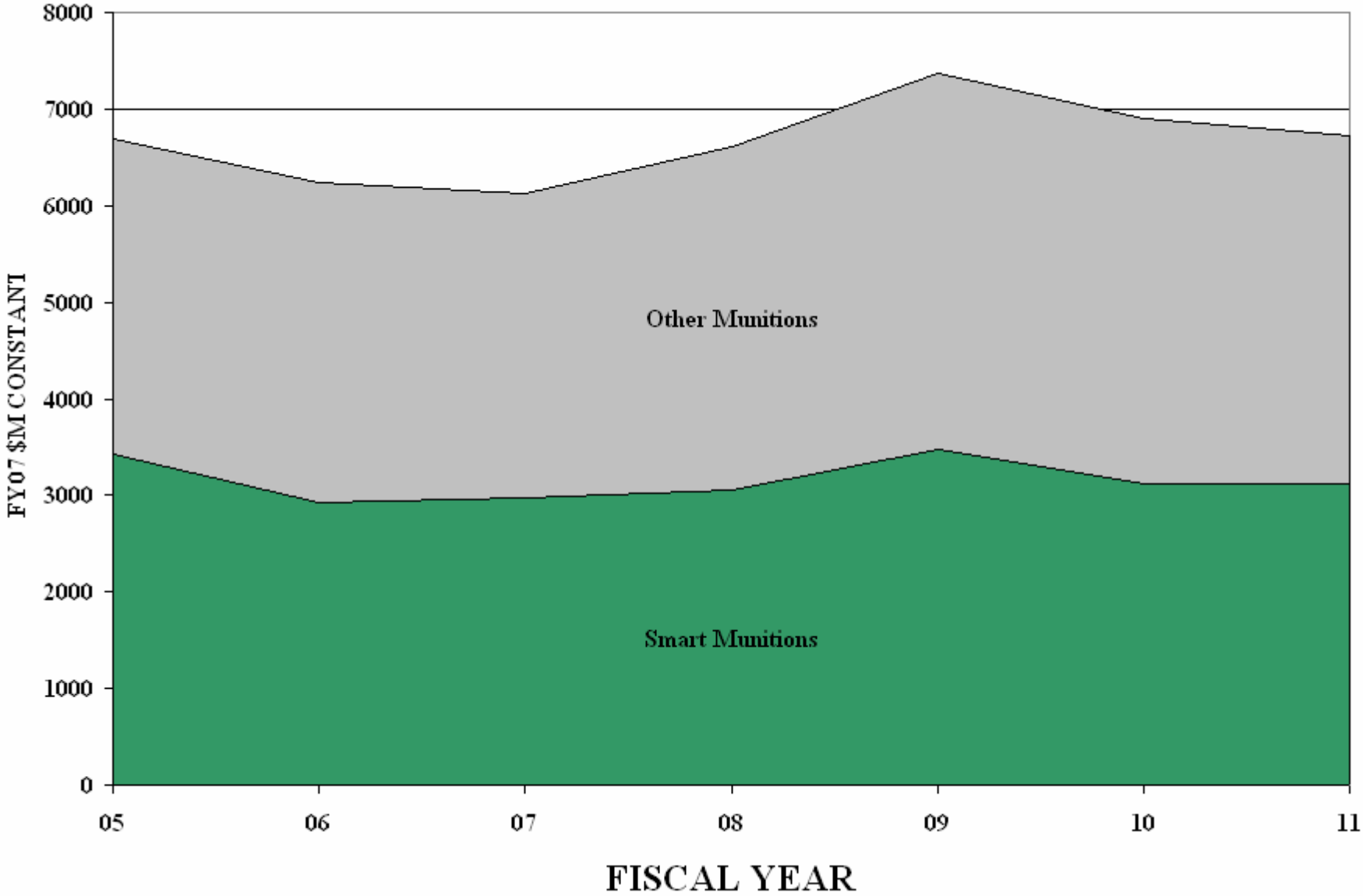
Terminology - Mission Context

- Fires in Support of Forces In Contact
- Fires to Enable Freedom of Ground Maneuver
- Fires to Enable Freedom of Air Maneuver
- Offensive Fires (Fires Independent of Maneuver/Contact)

DoD Munitions RDT&E and Procurement

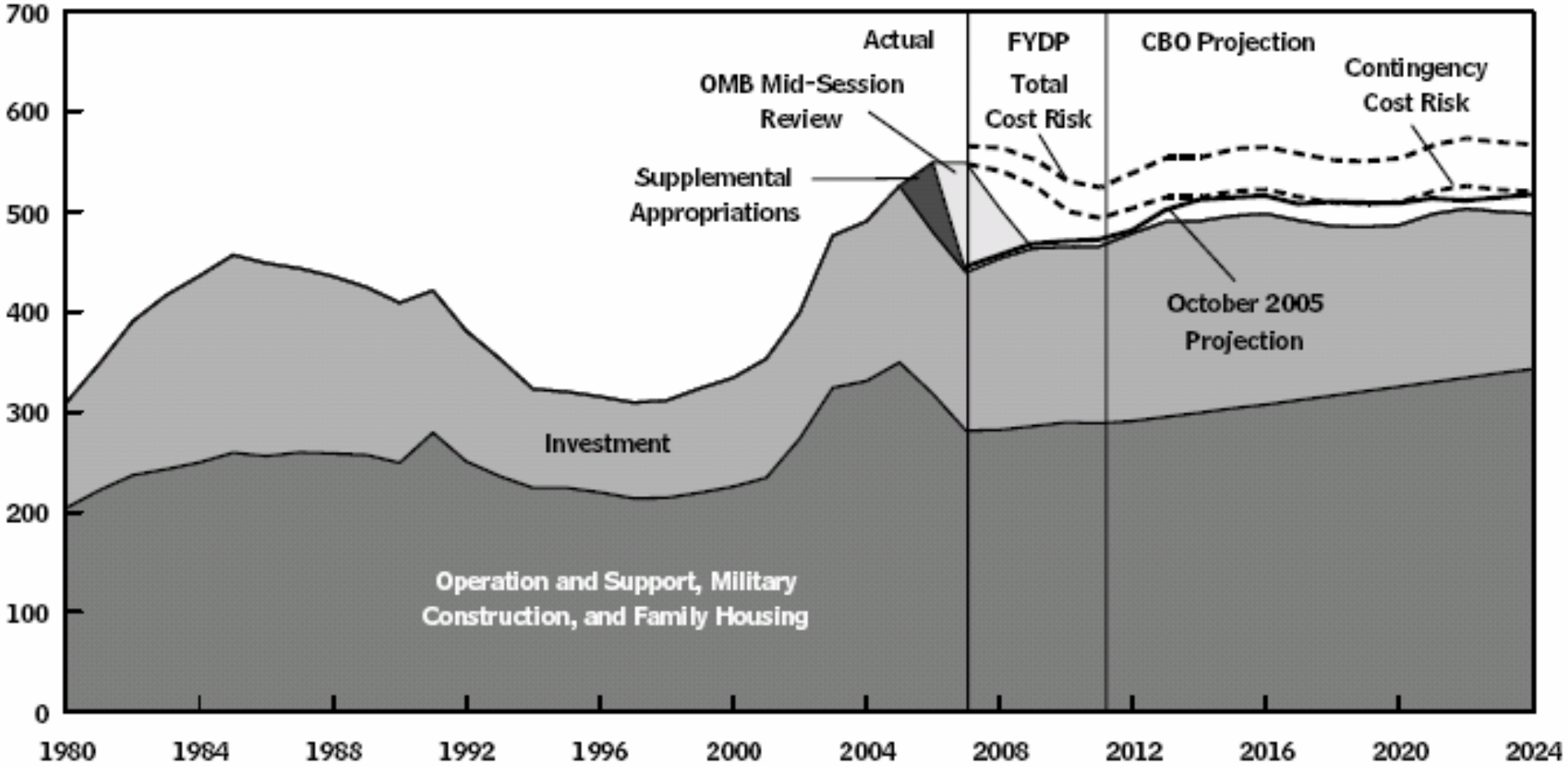


Smart Munitions vs. Other Munitions Procurement Trend



Past and Projected Resources for Defense

(Billions of 2007 dollars)

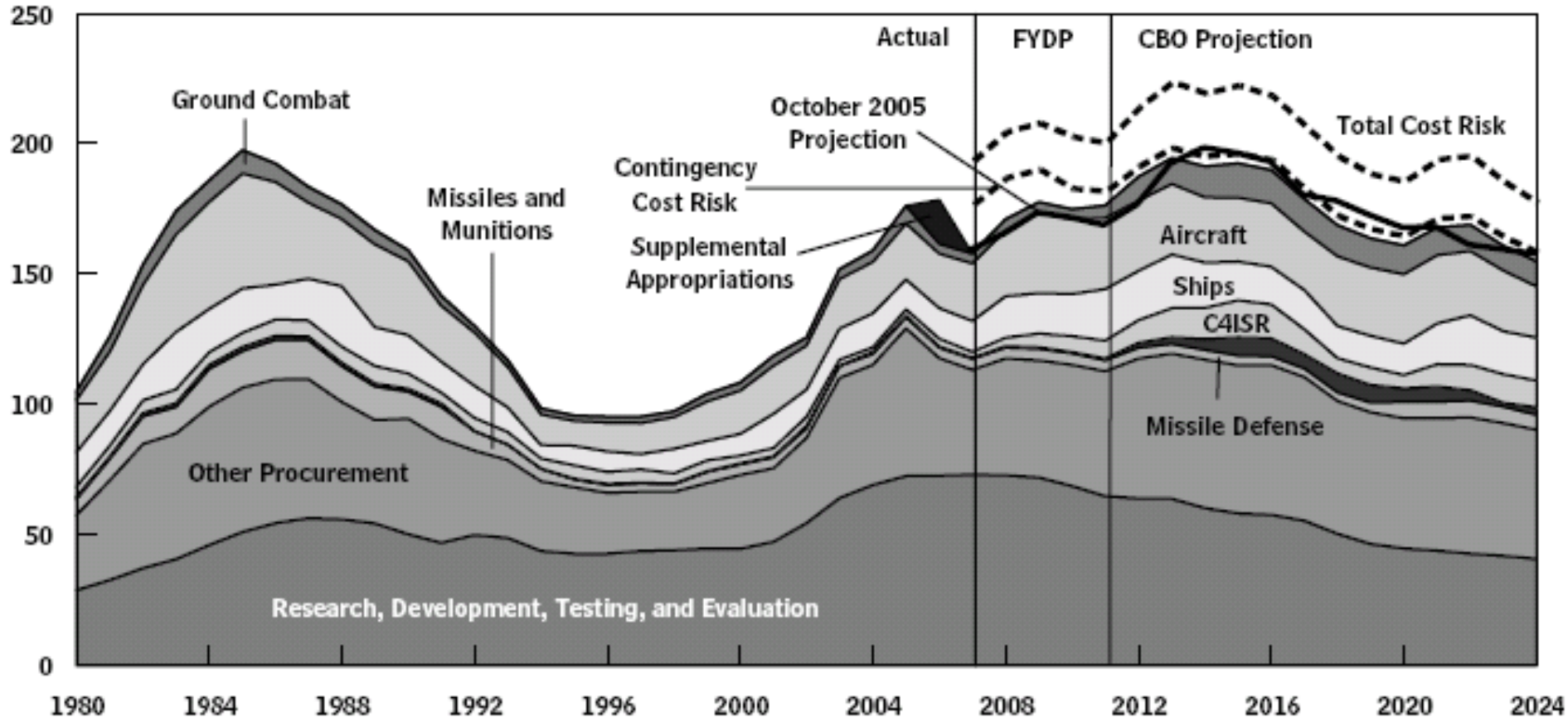


Source: Congressional Budget Office.

Note: FYDP = Future Years Defense Program; OMB = Office of Management and Budget.

Past and Projected Resources for Investment

(Billions of 2007 dollars)



Source: Congressional Budget Office.

Note: FYDP = Future Years Defense Program; C4ISR = command, control, communications, computers, intelligence, surveillance, and reconnaissance.

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UNITED STATES OF AMERICA