



Future Modular Force Strike Concept and Precision Munitions

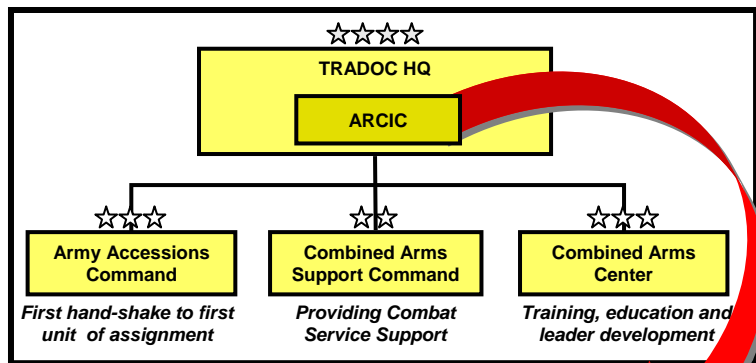
10 July 2007

Allan Resnick, SES

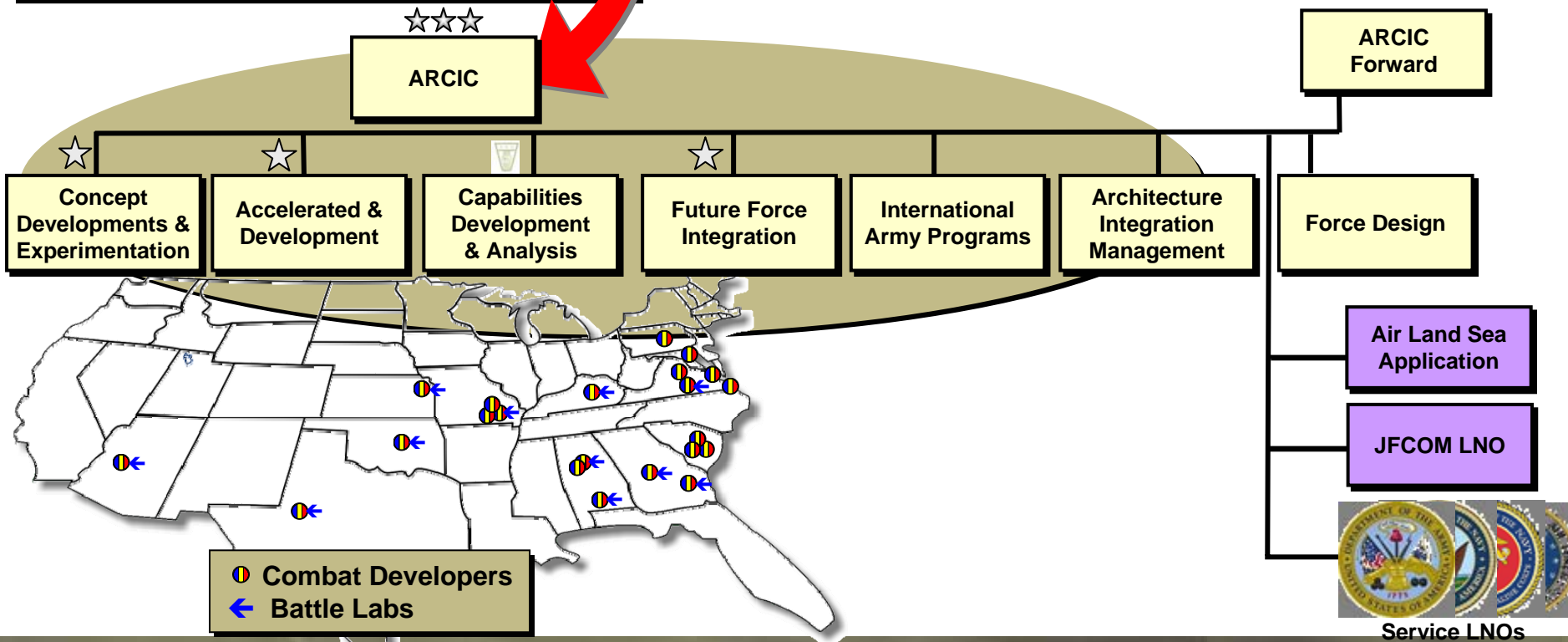
**Director, Capabilities Development and Analysis
Army Capabilities Integration Center
US Army Training and Doctrine Command**



Army Capabilities Integration Center



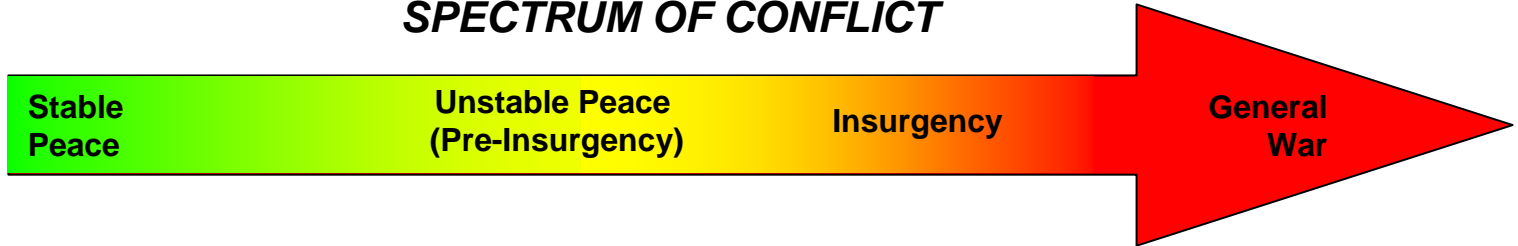
The Army Capabilities Integration Center designs, develops, integrates and synchronizes force capabilities for the Army across the DOTMLPF imperatives into a Joint, Interagency, and Multinational operational environment from concept through capability development.



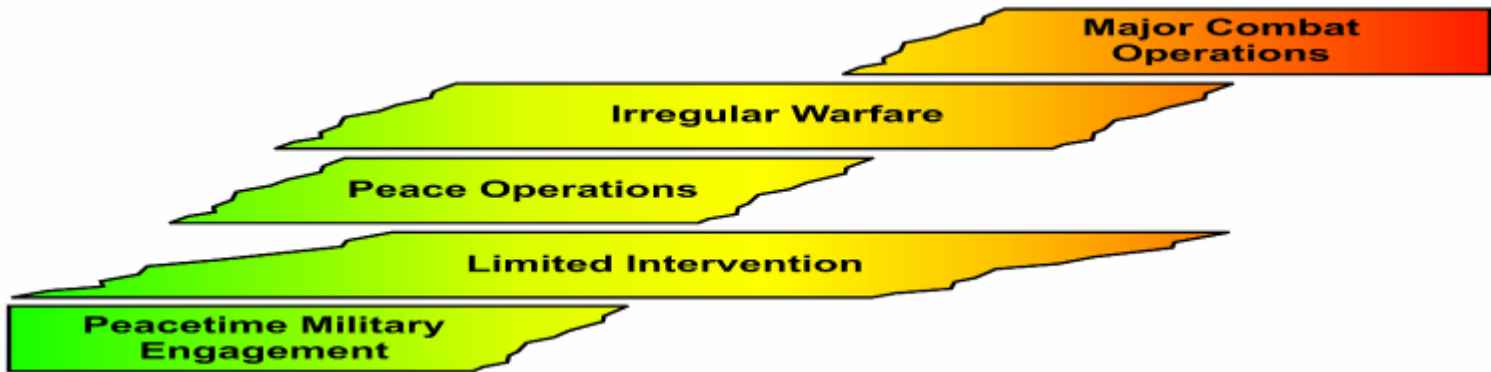


Spectrum of Operations in 21st Century

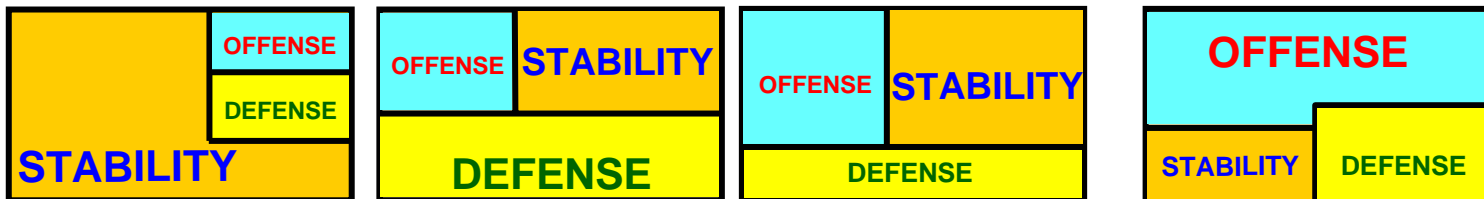
SPECTRUM OF CONFLICT



OPERATIONAL THEMES



FULL SPECTRUM OPERATIONS





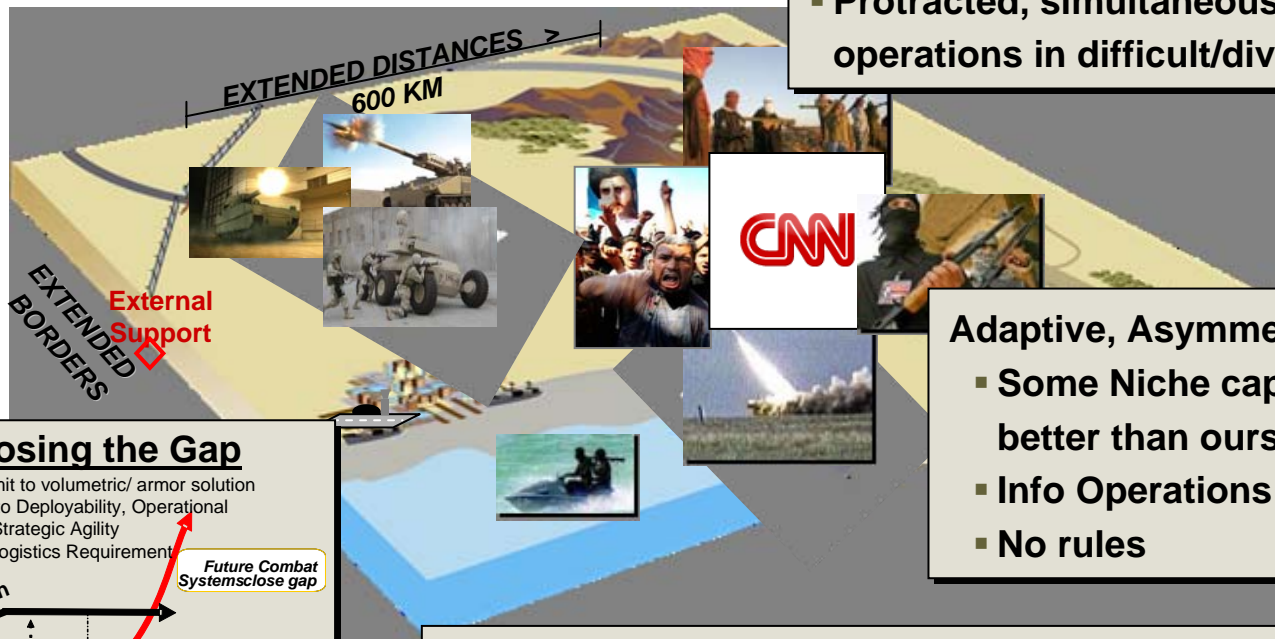
Who Will We Face? Where Will We Operate?

Enemies Will Seek to:

- Deter US involvement
- Isolate US from local support or allies
- Block entrance to country or lure US into “their zone”

Operational Complexity:

- Enemies who have “gone to school” on U.S. operations
- Traditional and Irregular
- Protracted, simultaneous, full spectrum operations in difficult/diverse terrain

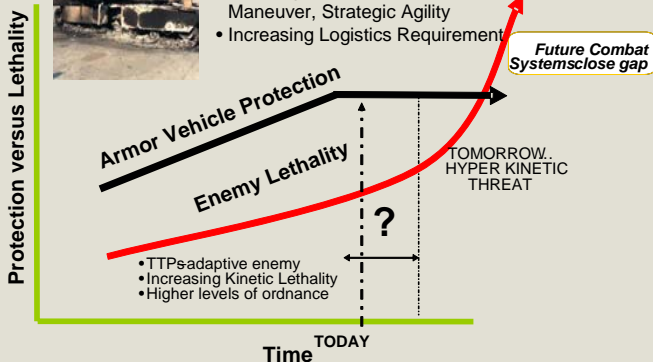


Adaptive, Asymmetric Threat

- Some Niche capabilities better than ours
- Info Operations
- No rules

Enemies are Closing the Gap

- Technical limit to volumetric/ armor solution
- Challenges to Deployability, Operational Maneuver, Strategic Agility
- Increasing Logistics Requirement

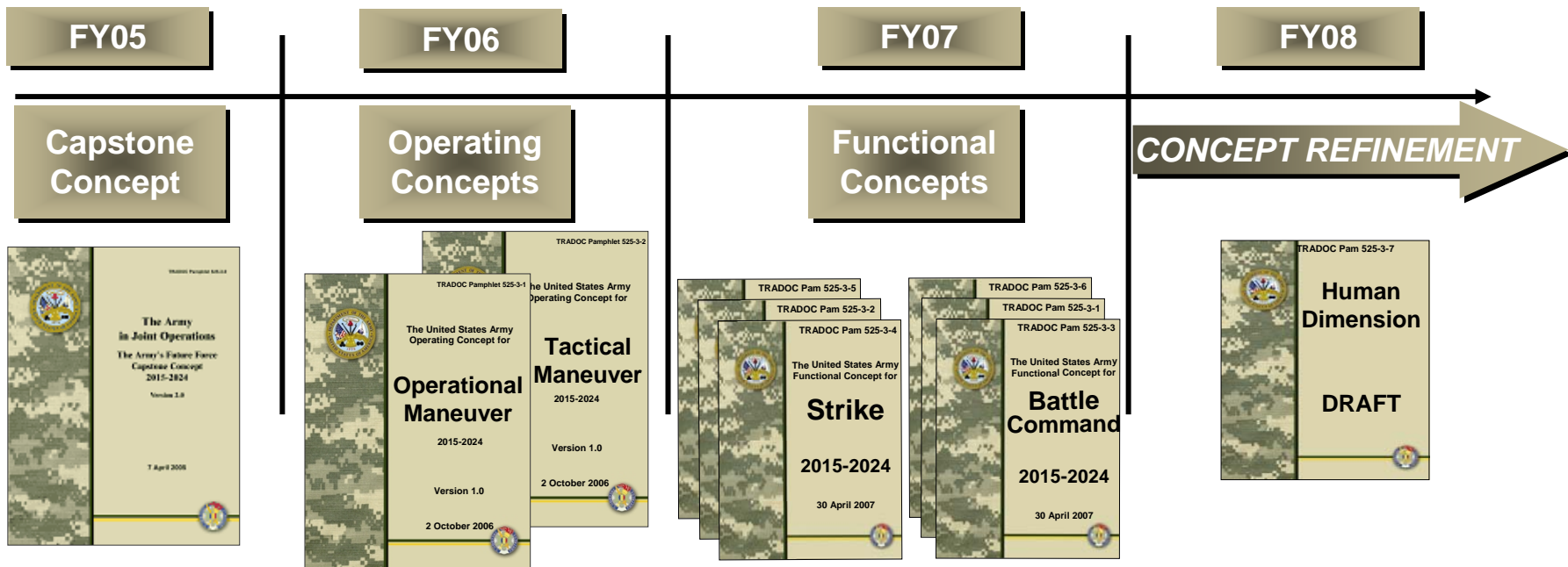


Second Lebanon War Insights (Hezbollah)

- Complex terrain fight in “their zone”
- Relied on low visibility and prepared defenses
- Relied on own secure lines of communication and predicted Israeli ground approaches
- Massed Rockets, ATGMs, RPGs, and Mortars (low tech new ways)



Army Concept Strategy



Wargaming and Experimentation

Capability Based Assessments (CBA)

A comprehensive set of concepts for future capabilities development



Functional Concept for Strike 2015-2024

TRADOC Pam 525-3-4 30 April 2007

THE PROBLEM

Future operational environment requires precise, responsive, integrated and interoperable fires (lethal and non-lethal) delivered from a wide range of sources (joint, interagency and multinational) at the tactical, strategic or operational level to defeat the enemy while simultaneously complementing movement, stability operations, and protection of friendly forces conducting Full Spectrum Operations.

SOLUTION SYNOPSIS

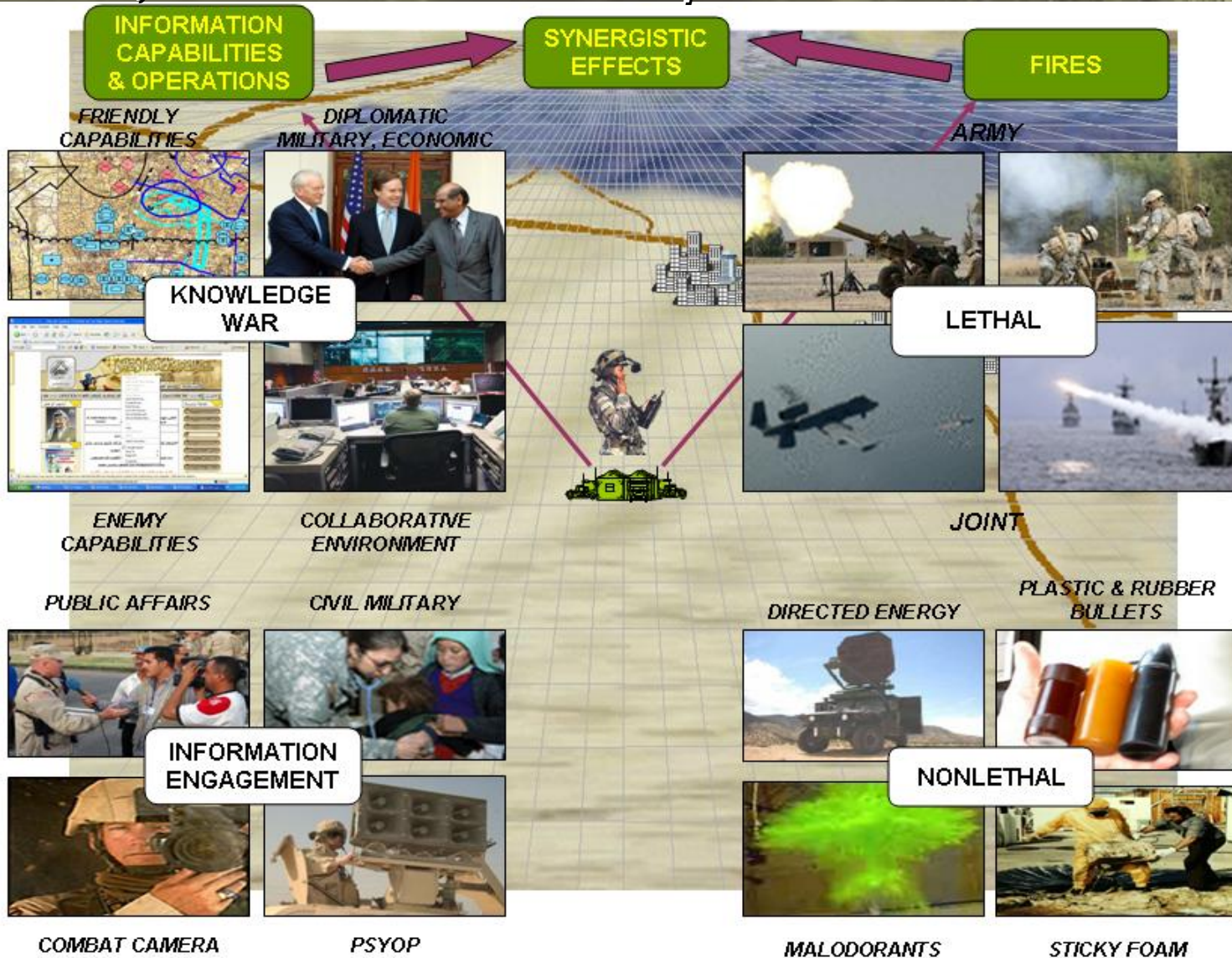
- **Tailored mix** of organic and available joint, allied, and coalition strike capabilities
- **Fully integrated**, transparent communication and computer interfaces between joint fires (**lethal / non-lethal**), command and control, and knowledge networks
- Continuous integration and employment of **networked fires** that will extend seamlessly from strategic to tactical levels and timeframes with no gaps in coverage or loss of timeliness
- **Near real-time situational awareness** to employ fires that achieve maximum desired effects
- **Advanced munitions** (lethal and non-lethal)
- Gaining and maintaining routine **access to Space**

Strike -- employment of fires in the future Modular Force, including available joint and multi-national fires, in support of Full Spectrum Operations and integration of fires with information capabilities and operations



Information Capabilities, Operations, and Fires

Strike, TRADOC Pam 525-3-4 30 April 2007





Precision Munitions Mix Analysis

Seeking Resourced Informed Solutions

Purpose: analysis of the Joint and Army precision munitions proposed for the *current and future forces* in medium and high intensity operations within Joint, Interagency, and Multinational (JIM) context to support program and funding decisions.

Problem Statement

Numerous Joint and Army precision munitions planned to support the current Heavy BCT forces and future Heavy BCT and FCS BCT forces. Army precision munitions cost estimates greatly exceed currently available and projected funding. The Army must determine what subsets (or mixes) of Army precision munitions best support the force within logistical and funding constraints.



Precision Munitions Mix Analysis

Context

Attributes: preferred mix determined based on ability to:

Threat & Environment

- Engage targets under adverse weather and countermeasure conditions.
- Engage targets under stringent ROE conditions (e.g., minimize collateral damage).

Current and Future Force

- Provide a balanced precision capability across echelons and battlefield functional areas.
- Provide a precision capability beginning FY08 and leverage munitions with best technical readiness level to minimize costs and facilitate transition between force designs.

Resources

- Meet the affordability requirements.
- Meet the logistic support capabilities of the current and future force.

- Multiple joint land operations scenarios around the globe
- More than 30 munitions candidates
- More than 180 target mission profiles

Joint, Army, and Other Services Participants

USAFAC
USAIC
USAAVNC
UAMBL
Army G3/G8
ARDEC-CSS
ARM PMO
JCM PMO
NAVSEA
NAVAIR
NLOS-LS TF
OPM Excalibur
OPM CAS
PEO Ammo
PEO Tac Missiles
PM Mortars
PM MAS
S3/PFRMS
TSM RAMS
TSM Cannon
DCSINT-Threats
USAF Doc Center
AMSAA
TRAC



Precision Munitions Mix Analysis Methodology

A methodology to screen, explore, and develop mixes of Army precision munitions through iterative analysis and integration of results from goal programming, force on force, and resource analysis.

Front End Analysis

Operational Framework & Requirements

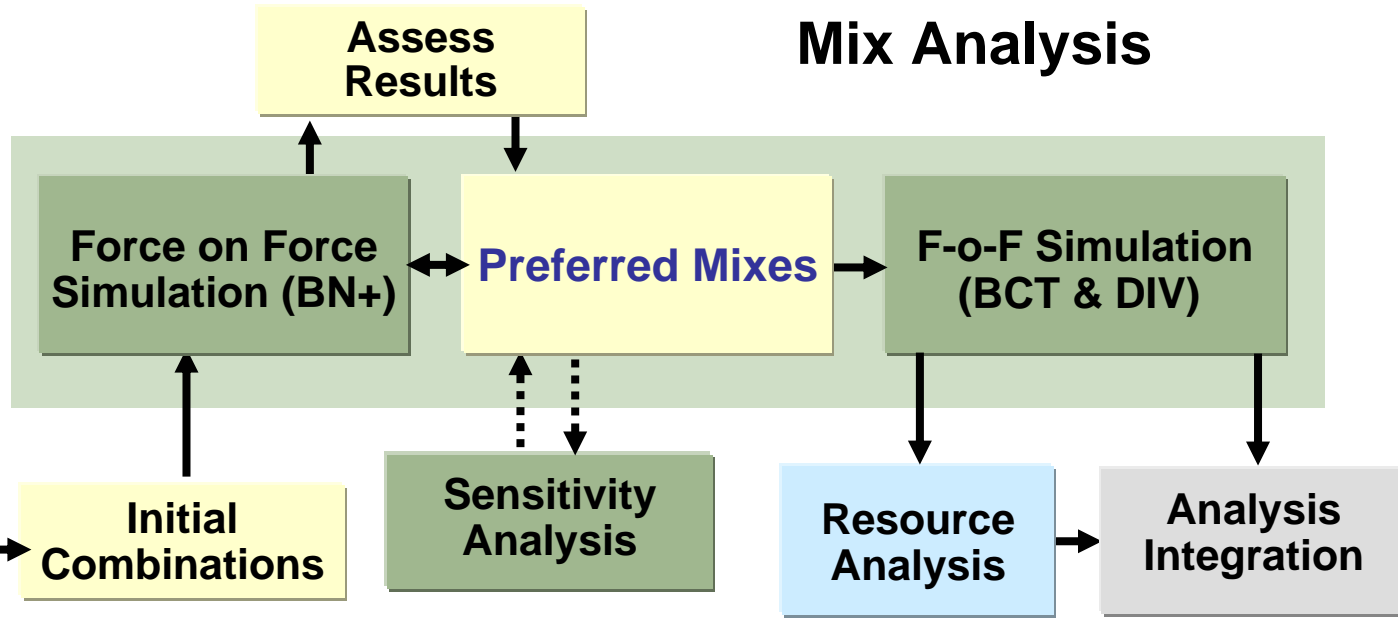
- *Mission Profiles*
- *Capability Packages*
- *Targets*
- *Weapons*
- *Ranked Pairings*

Screening Potential Mixes

Versatile Munitions

Versatile: The ability to achieve effects across the spectrum of the Threat target sets using diverse tactical selection criteria.

Mix Analysis



- *Cost*
- *Logistic Impact*
- *Affordability*



Precision Munitions Mix Analysis Insights

- Precision munitions are not a one-size fits all....Commanders require immediate options.
- Employment of precision munitions becomes most effective as we build and improve the future force network.
- Current and Future Forces (HBCT and FBCT) will be able to accomplish their missions with *a subset* of the Army's collection of precision munitions programs.
- Employing a subset of Army precision munitions causes greater reliance on joint capabilities (i.e. increased joint interdependence).
- Select Army Precision Munitions provided broadest utility across range of military operations (e.g. Hellfire)
- Select mixes *reduced* the overall *logistics burden*.
- Effectiveness and affordability will drive changes to *program quantities and production schedules*.

Way Ahead **U.S. Army Modernization Strategy**

Network

- ✓ On the move
- ✓ Multi Layered Network
- ✓ Joint Integrated
- ✓ Persistent, shared situational awareness

***Future Combat Systems
Integrating Agent for
Systems of Systems***

Modular Formations

- ✓ Better Protection
- ✓ Mission Effective and Efficient
- ✓ More Lethality
- ✓ Rotational, sustained presence

Soldiers and Leaders

(Mounted and Dismounted)



More

***Agile, Versatile, Lethal, Survivable,
Sustainable, Standardized***

Joint Modular Force Attributes

- ✓ Full Spectrum Operations Capable
- ✓ Projects And Sustains In Austere Environments
- ✓ Common Operating Picture, On The Move, Down To Soldier Level
- ✓ Lethal And Integrated Small Units
- ✓ Informed, Empowered, Multi Skilled Leaders And Soldiers
- ✓ Dominant Land Force



***Soldiers in Trained Formations Using Advanced Network Connected to
Manned and Unmanned Ground and Air Systems***



BACK UPS



Future Force Capstone Concept ***“Army in Joint Operations - 2015 - 2024”***

TRADOC Pam 525-3-0

THE PROBLEM

- Volatile, Uncertain, Complex, Ambiguous Strategic Environment.
- Full Spectrum Dominance Transformation Guidance.
- Complex Threats with Robust Anti-access Capabilities.
- Joint, Interagency, and Multinational Context.
- Concurrent Operational Requirements: Expeditionary Capabilities and Campaign Qualities.

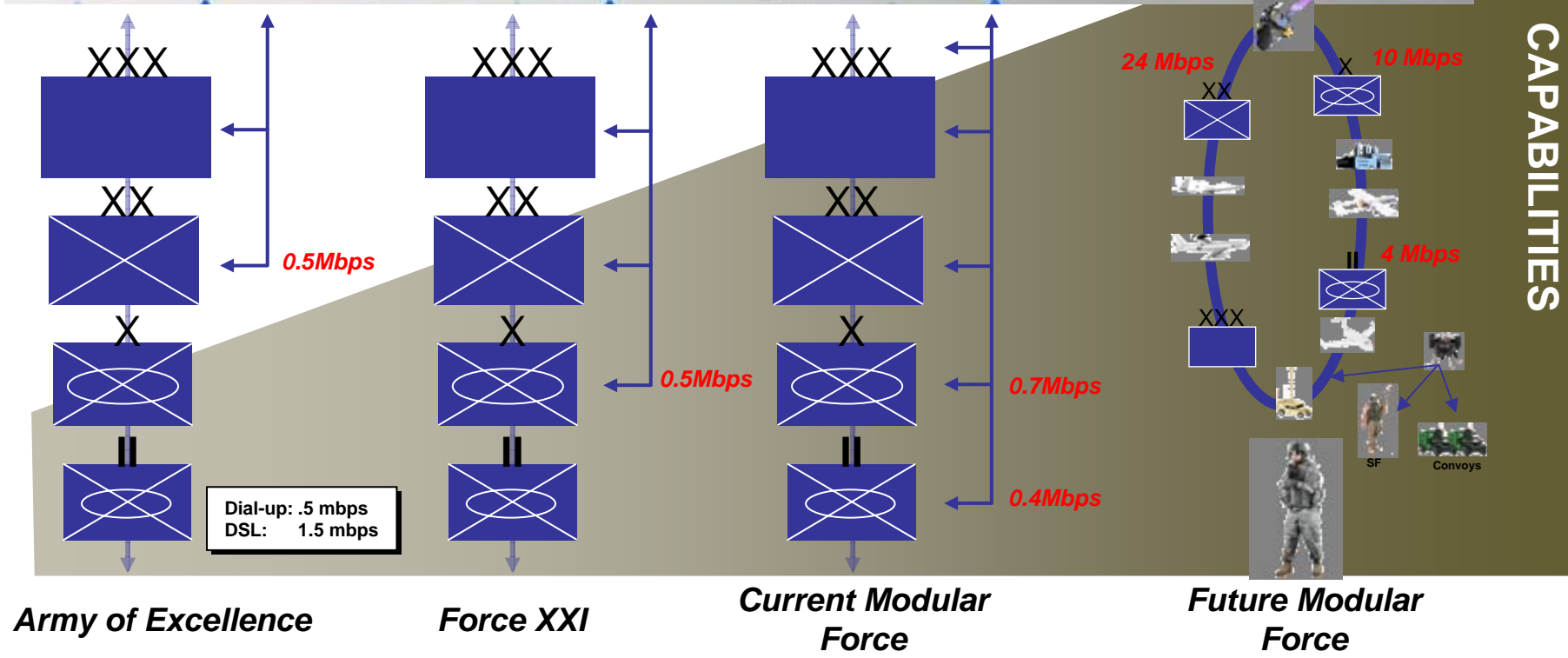
SOLUTION SYNOPSIS

- Shaping and Entry Operations
- Operational Maneuver from Strategic Distances
- Intratheater Operational Maneuver
- Decisive Maneuver
- Concurrent and Subsequent Stability Operations
- Distributed Support and Sustainment
- Network-Enabled Battle Command

Key Enablers – Joint Interdependencies



Evolving Network-Enabled Battle Command



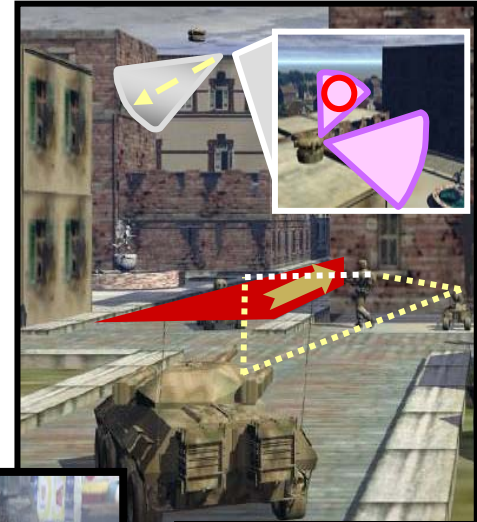
FCS BCT: Over 20x increase in ISR improves the unit's Quality of Information (See First). The network enables Shared Situational Understanding (Understand First) and Force Effectiveness (Act First).



FBCT Designed for Complex Environments

Compared to Today's Heavy Brigade:

- 10X More Unmanned Assets
- 6X More Sensors . . . All Networked
- 2X More Infantry Soldiers in Squads
- 3X More Reliable and Maintainable
- Next Generation Manned Ground Vehicles
 - Increased lethality and survivability
 - Chemical/Bio Hardened
 - 360 degree hemispheric Active Protection
 - Nodes for sharing information: carries most of the sensors



Lighter, Faster, and Increased Mobility

Networked Strike

