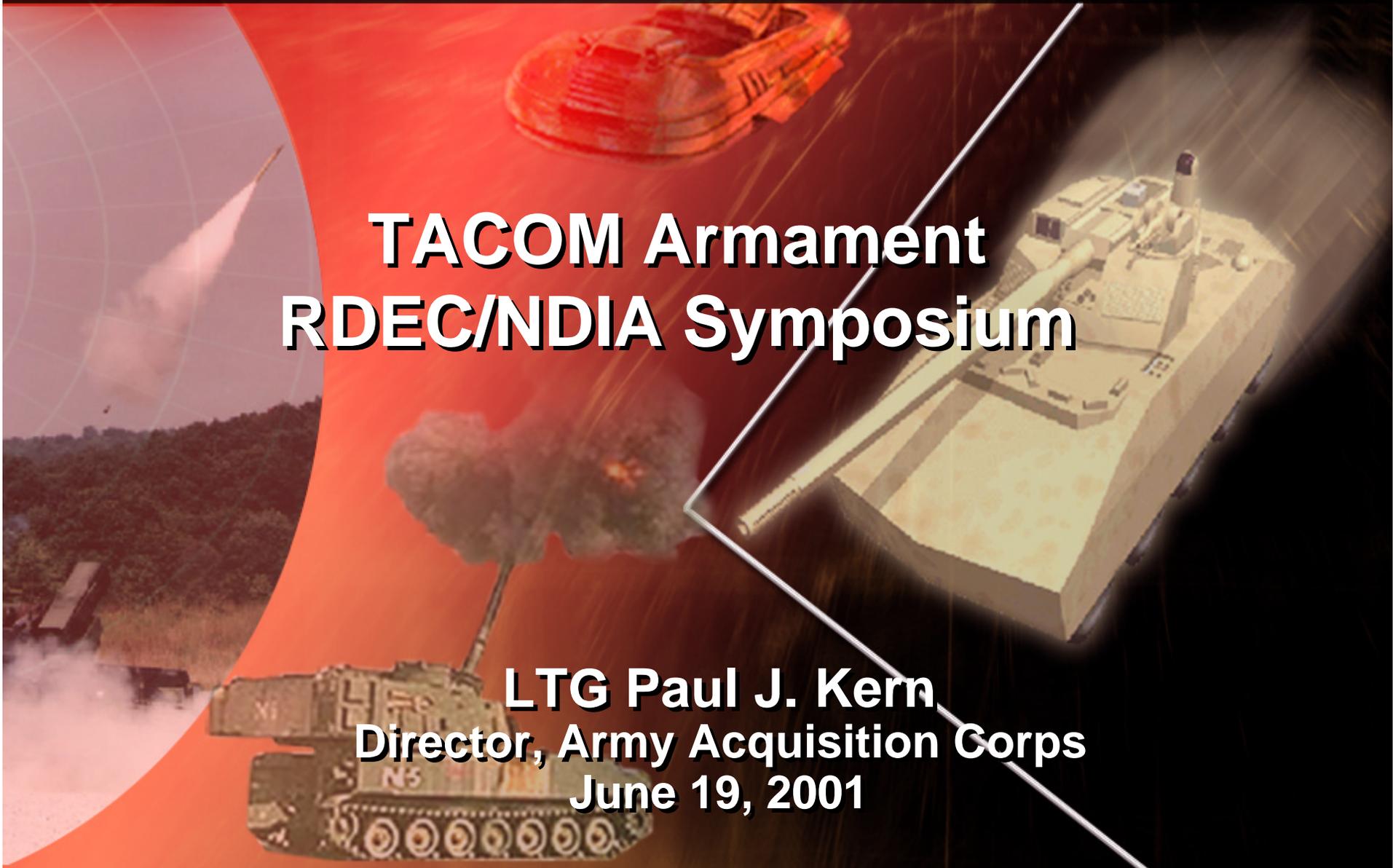


The Army Transformation and Challenges in the Objective Force

TACOM Armament RDEC/NDIA Symposium

**LTG Paul J. Kern
Director, Army Acquisition Corps
June 19, 2001**



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WWII - Entry Into War Caused Rapid Change

1941



General Marshall's Dilemma - What to Build?

Heavy Tank - survivable, poor deployability

Light Tank - Deployable, poor survivability

TF Smith - A Failure to Change

US Weapons Ineffective Against T-34

Lack of Ammunition

6 HEAT Rounds

No Anti-tank Mines

Poor Communications

Wet Radios

Land Lines Cut by T34 Tracks

150/540 Americans died/wounded/missing



Desert Storm - The Enemy Changed

1991

Right Tank - Wrong War

A Cold War Force Fights in the Desert

Other Reasons We Must Change

Somalia

Zaire

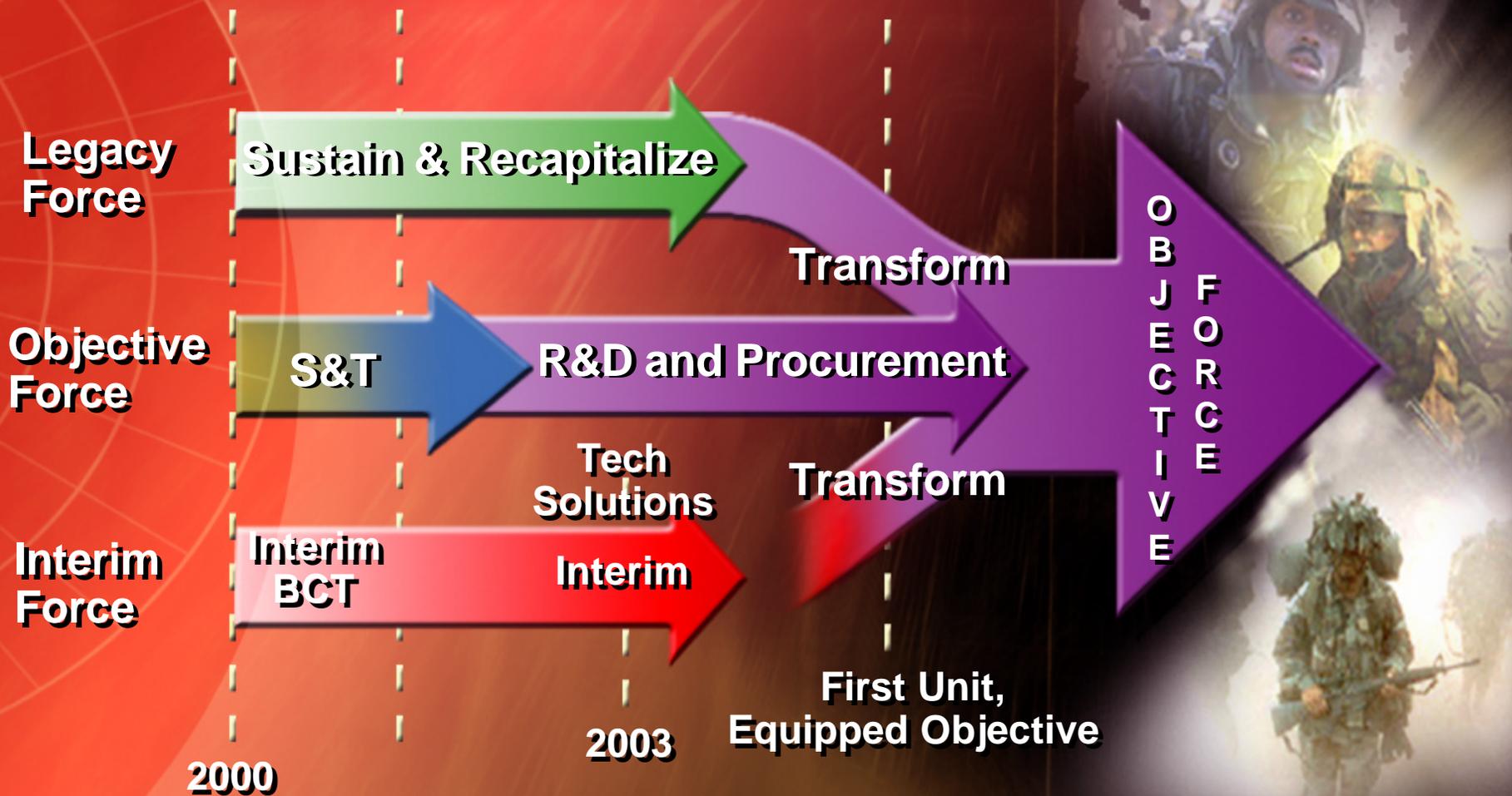
Haiti

Kosovo

2001



The Army Transformation



...Responsive, Deployable, Agile, Versatile,
Lethal, Survivable, Sustainable.

Recapitalization Programs

Two Paths:

Rebuild

Selected Upgrade

AIM XXI*
 UH-60A
 CH-47D
 M9 ACE
 M88A1
 BRADLEY A2
 PATRIOT
 HEMTT
 SEE
 FIREFINDER
 ELEC SHOPS
 FAASV
 SUSV

Zero Time/Zero Mile
 Maintenance Standard

Zero Time/Zero Mile
 Maintenance Standard

Technology Insertion

Technology Insertion

Same Model-
 New Life

Upgrade Warfighting
 Capability

New Model-
 New Life

M1A2 SEP*
 AH-64D
 UH-60M
 CH-47F
 AVLB
 HERCULES *
 BRADLEY A3*
 MLRS A1 *
 M113 A3 *
 HEMTT ESP
 M915A4 *
 HMMWV

D7 DOZER*
 SCRAPER

One Outcome:

Organic Depot End Item
 Workload

- Extended service life
- Enhanced Capability
- Reduced Operating and Support (O&S) Cost
- Improved System Reliability, Safety, Maintainability, and Efficiency

* Currently in production

Interim Armored Vehicle (IAV) Performance Characteristics

60 mph maximum speed

**14.5 mm AP All
Around Armor
Protection**

**85 Percent Parts
Commonality Across All
System Configurations**

**Combat Weight
37,796 lbs.**

**Roll-On/Roll-Off
Capable With C130
Aircraft**

**No Requirement For Heavy
Equipment Transport
to The Battlefield**

5.7 Miles Per Gallon

Transports 9-Man Squad

Low Acoustic Signature

Run-Flat Tires

Fire Suppression System

**Low Sustainment
Cost**

**Command, Control,
Communication and Computers,
Intelligence, Surveillance
and Reconnaissance System Architecture**

**Superior Ride Quality/
Low Interior Noise
Reduces Crew Fatigue**

**Self-Recovery
Winch**

**Remote Weapons Station
MK 19/.50 cal Machine gun**



IAV Variants and Configurations



Infantry Carrier Vehicle



Engineer Squad Vehicle



Reconnaissance Vehicle



Medical Evacuation Vehicle



Mortar Carrier Vehicle



Anti-Tank Guided Missile Vehicle



Command Vehicle



NBC Reconnaissance Vehicle

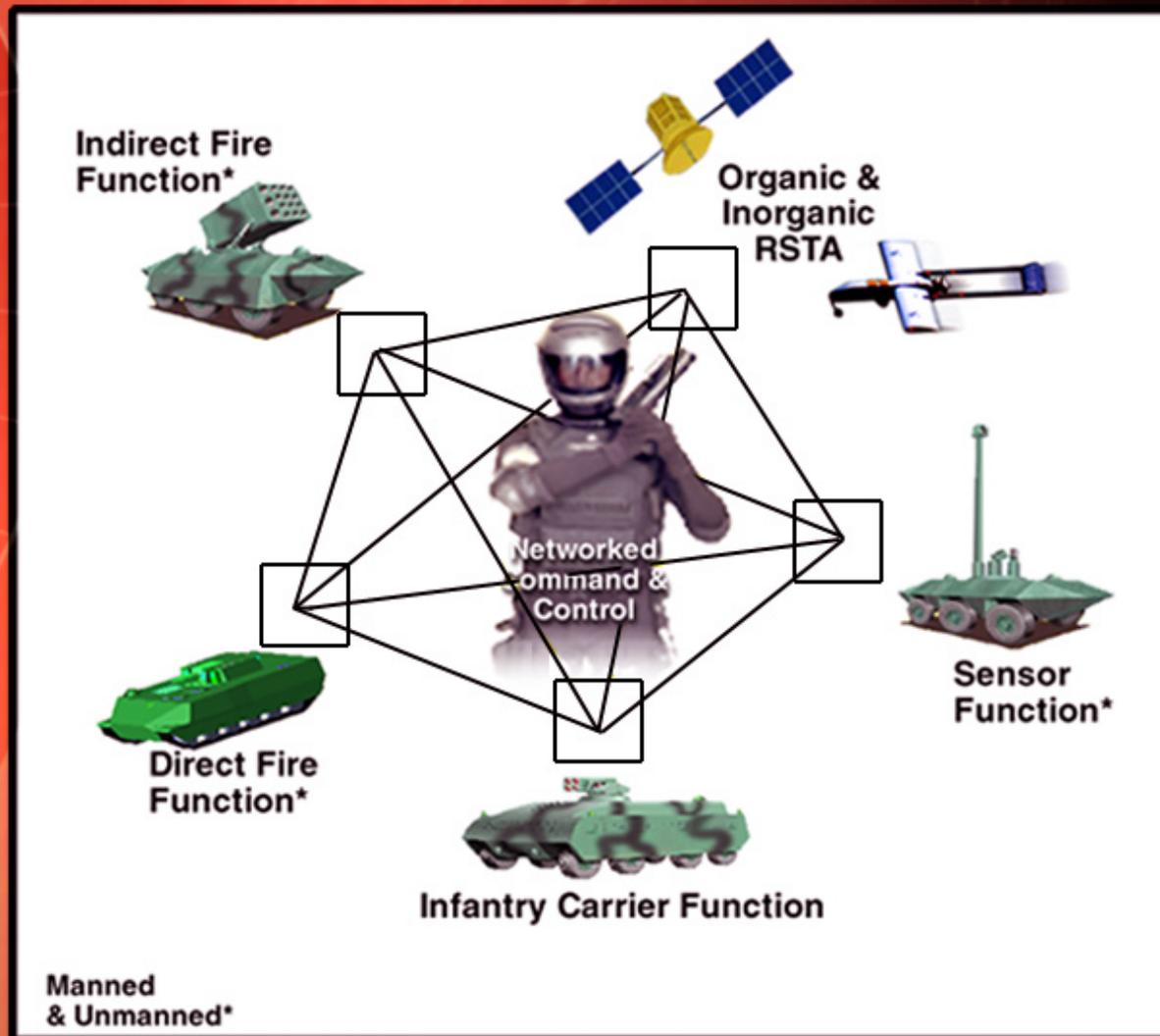


Fire Support Vehicle



Mobile Gun System

Future Combat Systems Innovative Concepts for Objective Force



How Should We Organize to Accomplish This?

System Optimization

VS.

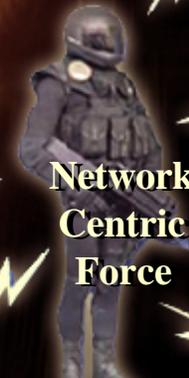
System of Systems



Small Unit UAV



Robotic Direct Fire



Network Centric Force

Distributed Fire Mechanisms



Manned C2/Infantry Squad



Other Layered Sensors



Robotic Sensor



Robotic NLOS Fire

DARPA FCS Design Concept Phase Contractors' Progress

•Emerging Ideas

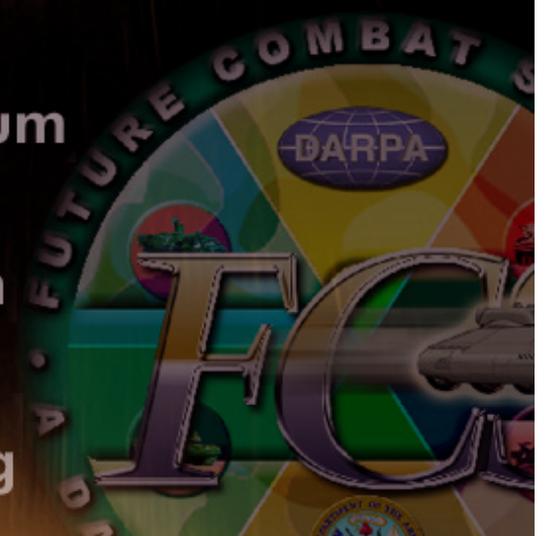
- 5 -19 Ton Vehicles
- Organic UAVs
- Focus on BLOS/NLOS Engagements
- Multi-layered Sensor Suites
- Robust Communications Networks
- Robotics Play a Key Role
- Level of Risk Varies

Team Gladiator

Team Full Spectrum

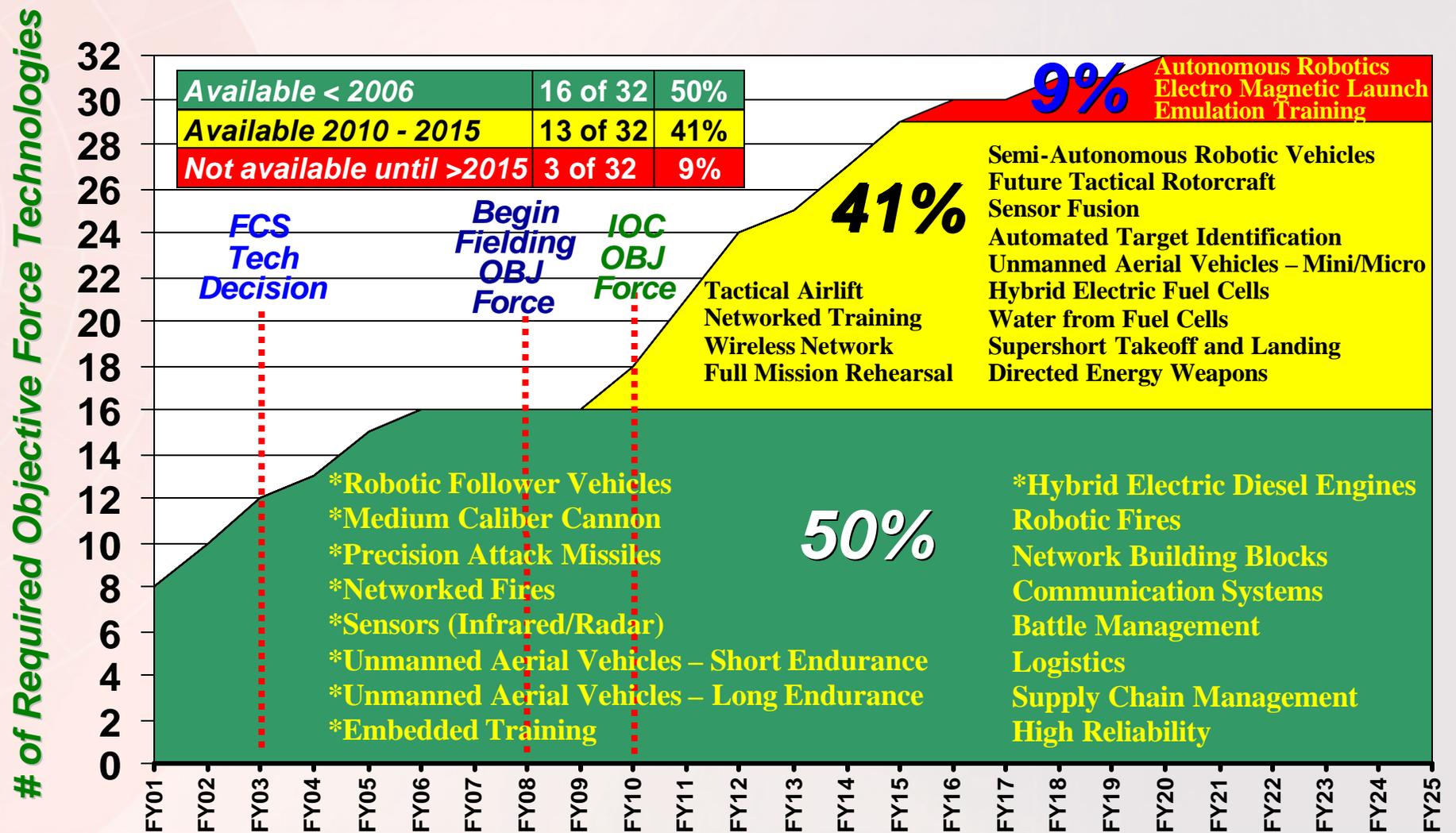
Team FoCus Vision

Team Boeing



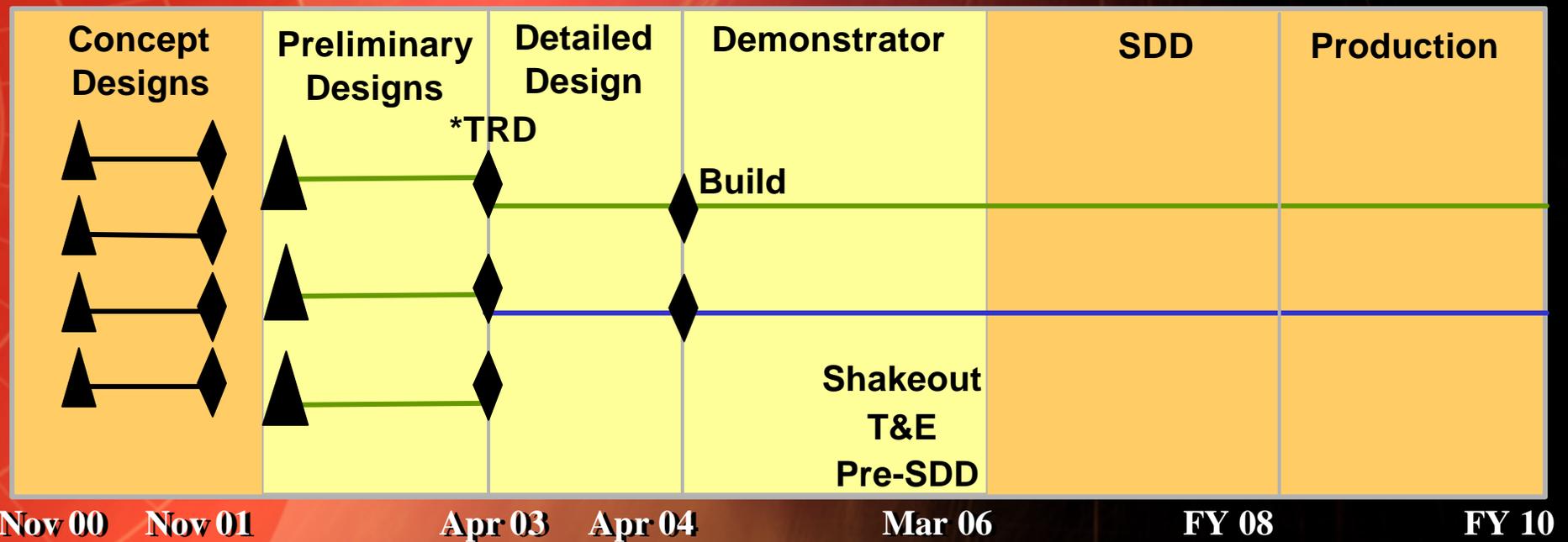
Objective Force

Army Science Board S&T Assessment



* Pacing Technologies

Current FCS Program Schedule



Fire Support - The Path Ahead



Reduced Ammunition Requirements Are Needed To Meet Objective Force Deployment Timelines

***350,000 Tons of Ammunition**

Saudi Arabia

* Source: *Certain Victory - The U.S. Army in the Gulf War*, by BG Robert H. Scales Jr., page 81

Unexploded Ordnance in The Gulf War

- Highly Successful Multiple Launch Rocket System Delivered “Steel Rain”
- 9,660 Rockets Fired in Combat, Each with 644 M77 Antipersonnel and Antimateriel Grenades
- A 5% Dud Rate ---> 311,052 Unexploded Grenades
- Compounded with Additional UXO from ATACMS, DPICM, Cluster Bombs, TLAM-D, etc.



Impact of Unexploded Ordnance on Future Warfare

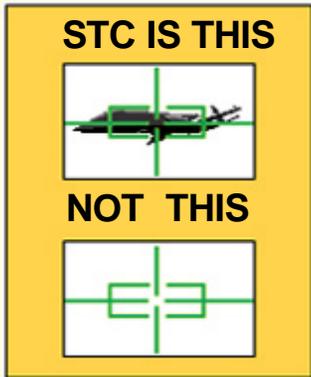
- Urban or Restricted Terrain
- Dismounted Infantry
- New Lighter Vehicles
- After 6 Years, Still No Self-Destruct Fuze
- This Must Be Solved on OBJ Force

Lethality Platforms



Air Defense Target Acquisition To Target Engagement

A 25 Second Process

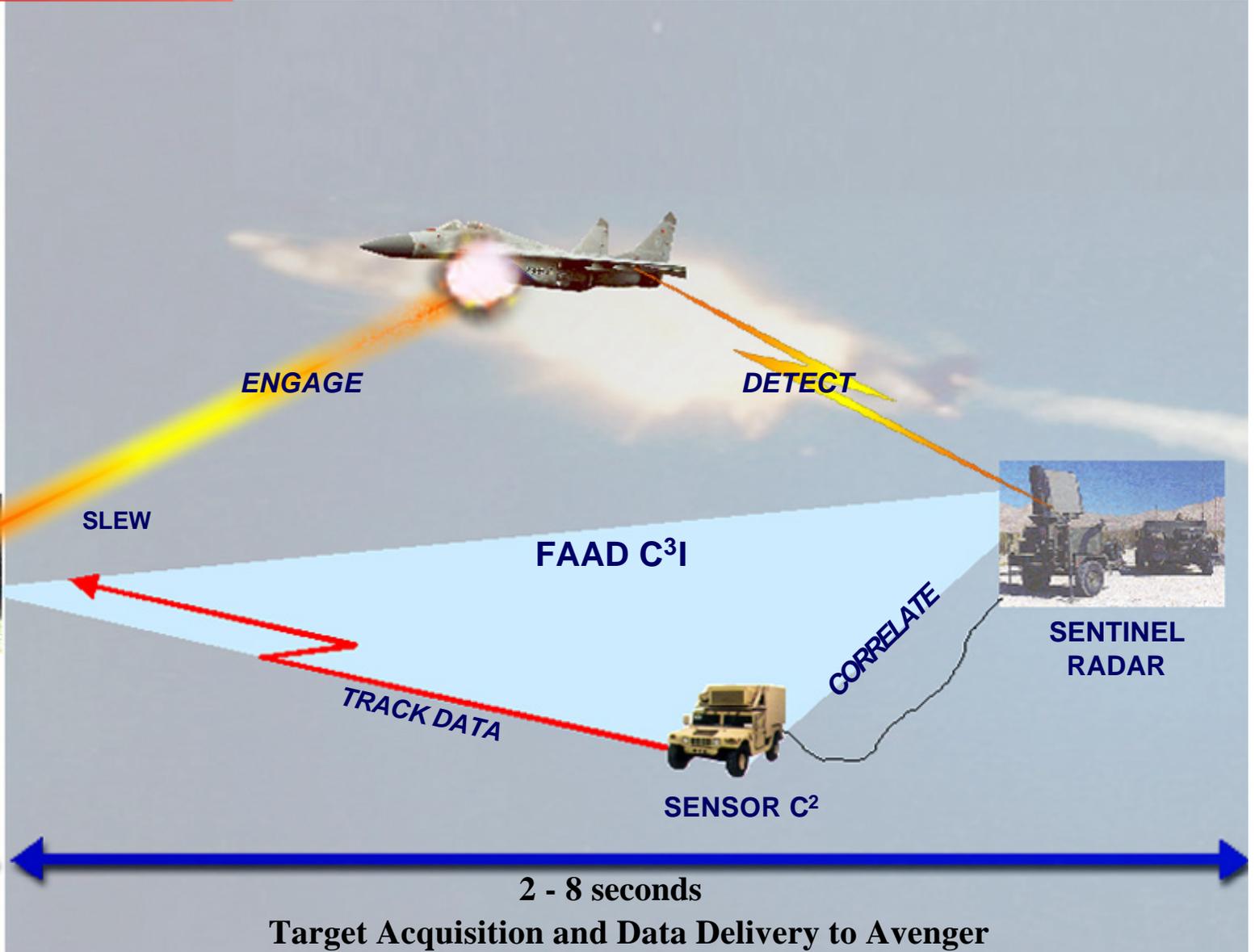


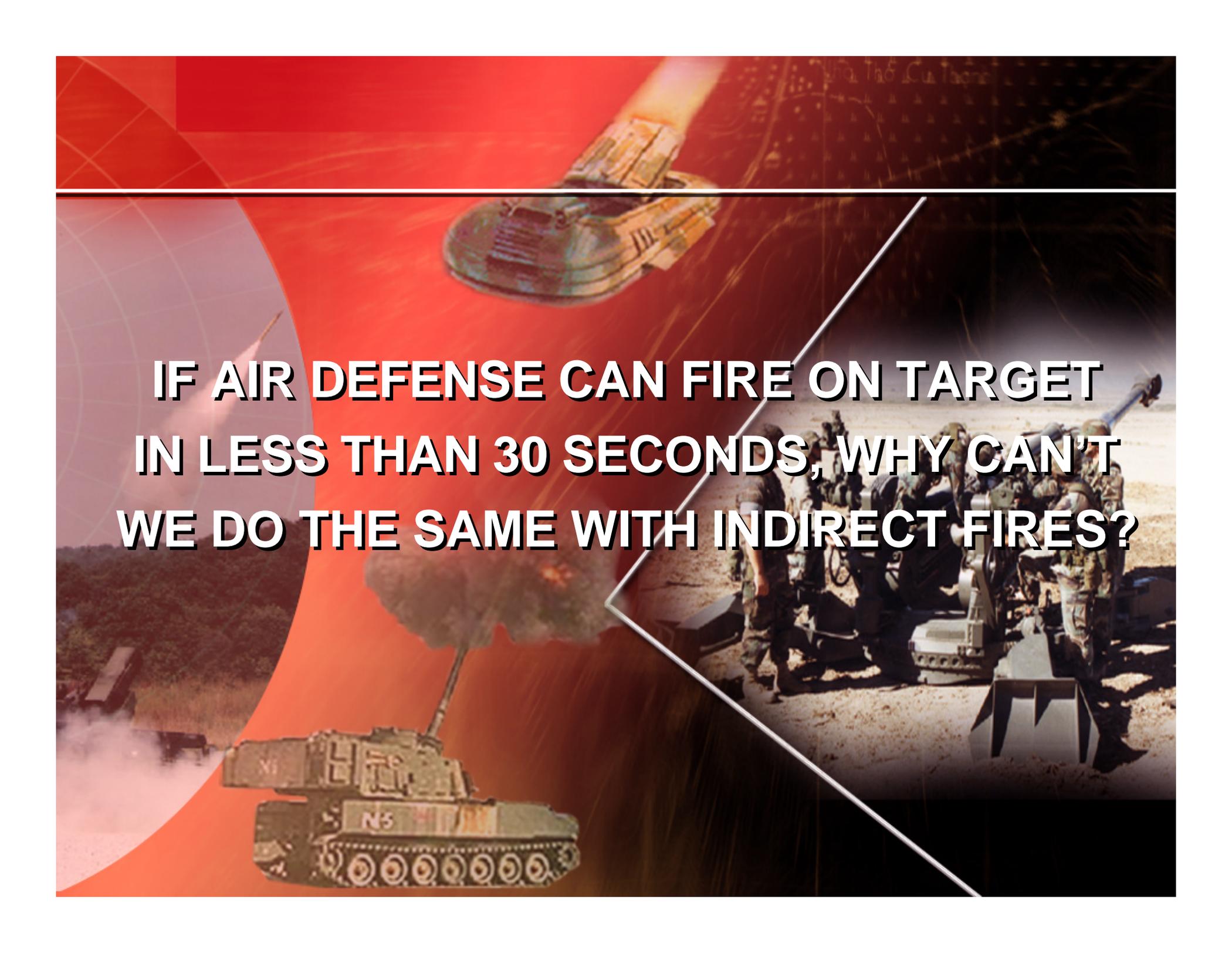
GUNNER'S VIEW



AVENGER

17 seconds
Engagement



The image is a collage with a red and orange color scheme. At the top, a satellite is shown in orbit. Below it, a tank is depicted firing a shell, with a large plume of smoke and fire. In the bottom right, a group of soldiers in camouflage uniforms are gathered around a piece of equipment, possibly a mortar or a similar indirect fire weapon. The background features a grid pattern and some faint text in the upper right corner. The central text is white with a black outline and is set against a semi-transparent dark background.

**IF AIR DEFENSE CAN FIRE ON TARGET
IN LESS THAN 30 SECONDS, WHY CAN'T
WE DO THE SAME WITH INDIRECT FIRES?**

We Must Simplify Software Management



Legacy Software



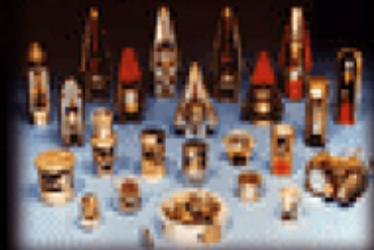
Objective Force Software

Needed: One Software Solution for Objective Force Fires



Other New Technologies for the Objective Force

- Shoot on the Move Howitzer
- Smooth Bore Howitzer
- Missile/Gun Combination
- Highly Precise Weapons
- Fuzes with 99+% reliability
- Design for Demil
- Shelf-life Designed in



Innovative Concepts are Needed

- Eliminate Excess Parts
- Reduce Size/Weight
- Design In Reliability/Supportability

Strategies I'm pursuing:

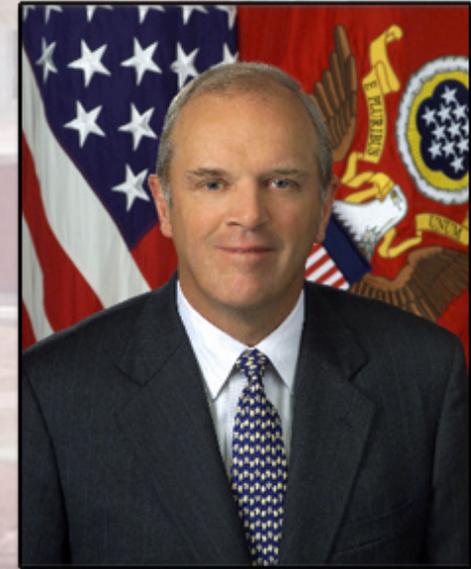
- Expand Collaborative Efforts-Open Communications
- Provide Financial Incentives for Government Labs/Industry
- Establish a DoD/Industry Activity to Exchange Best Ideas

... remember to keep soldiers involved



The Secretary of the Army's Four Objectives

- Invest in People
- Assure Readiness
- Transform the Entire Army
- Adopt Sound Business Practices



"Regardless of the challenges, however, I will move forward with transformation, and so should everyone else in the Army . . . if there are disbelievers, they need to get on board."

Secretary of the Army Thomas E. White, June 12, 2001



*Facing the
Future...*

Together