



# Army Requirements and Vehicle Modernization

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US Army Training and Doctrine Command

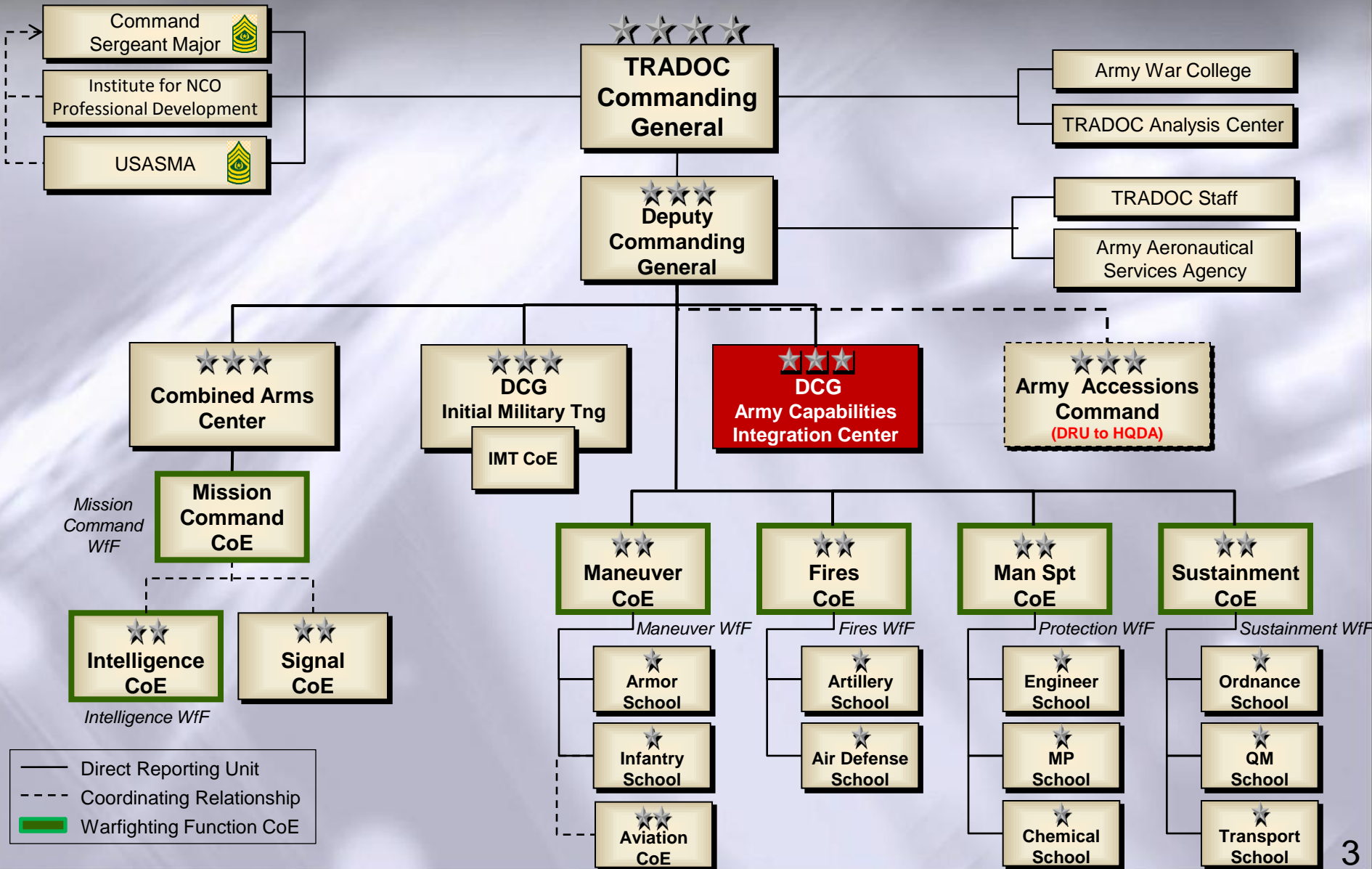
*TRADOC: Victory Starts Here !*

## Agenda

- TRADOC & ARCIC Overview
- The Future Operational Environment
- The New Army CAPSTONE Concept and WHAT we need the Army to do
- Where Combat Vehicle Modernization Fits....
  - ❖ From Concept to Capabilities
  - ❖ Wheeled Vehicle Strategy
  - ❖ Combat Vehicle Strategy

# Organization

TRAINING AND DOCTRINE COMMAND



## Emerging Trends in the Operational Environment

### Uncertainty

Location, Adversaries, Context, Duration



### Increased Competition



Rising powers, organized militias, technology as a leveler

### Hybrid Threats



Dynamic combinations of conventional, irregular, terrorist and criminal capabilities

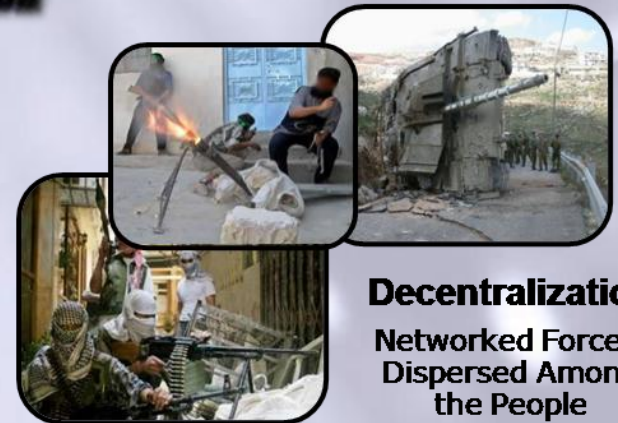
### Pace of Change



Exponential, not Arithmetic

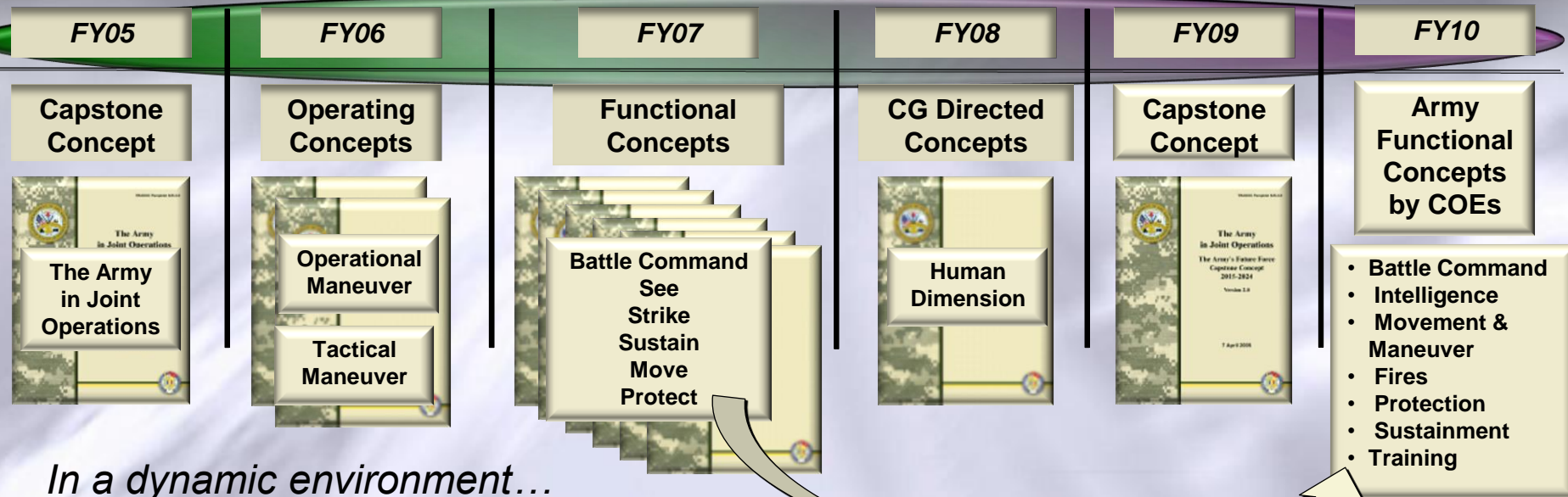
### Decentralization

Networked Forces, Dispersed Among the People



**Military Power in the 21<sup>st</sup> Century will be defined by our ability to adapt**

## The Army Concept Framework



*In a dynamic environment...*

### Concepts:

- Organize ideas about how we fight;
- Identify
  - problems to solve,
  - solution components,
  - and how those components work together;
- Account for DOTMLPF-C implications;
- Nest and support Joint Operations.

Moving to:

### Outcomes:

*Concepts provide a foundation of warfighting assessments. They provide future focus for developing required capabilities for an integrated and networked force.*

# 2009 Army Capstone Concept

- Operationalize the CSA's vision of balancing the Army
- Clearly articulate how the Army *thinks about* future armed conflict under conditions of *uncertainty* and complexity in an Era of Persistent Conflict
- Describe how the Army conducts operations as part of a Joint, Interagency, Intergovernmental & Multi-national (JIIM) team
- Use *grounded projections* to describe the broad range of capabilities the Army will require in 2016-2028 to apply finite resources
- Place modernization decisions in a broader context of future armed conflict
- Provide a conceptual *foundation* to guide future force development

Ultimately, the ideas that emerge will guide changes across DOTMLPF

## Adapting Concepts to Capabilities...

CURRENT

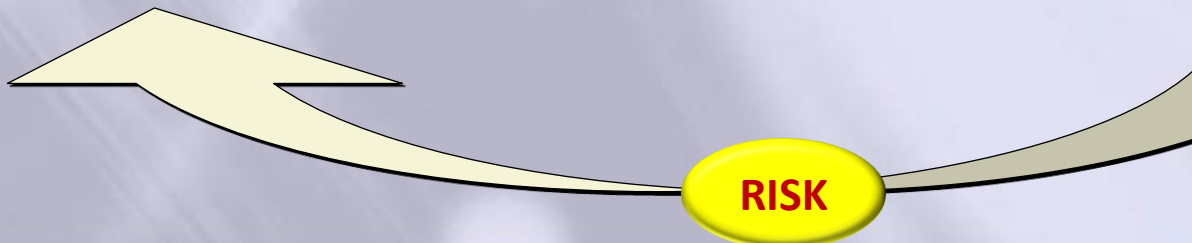
FUTURE



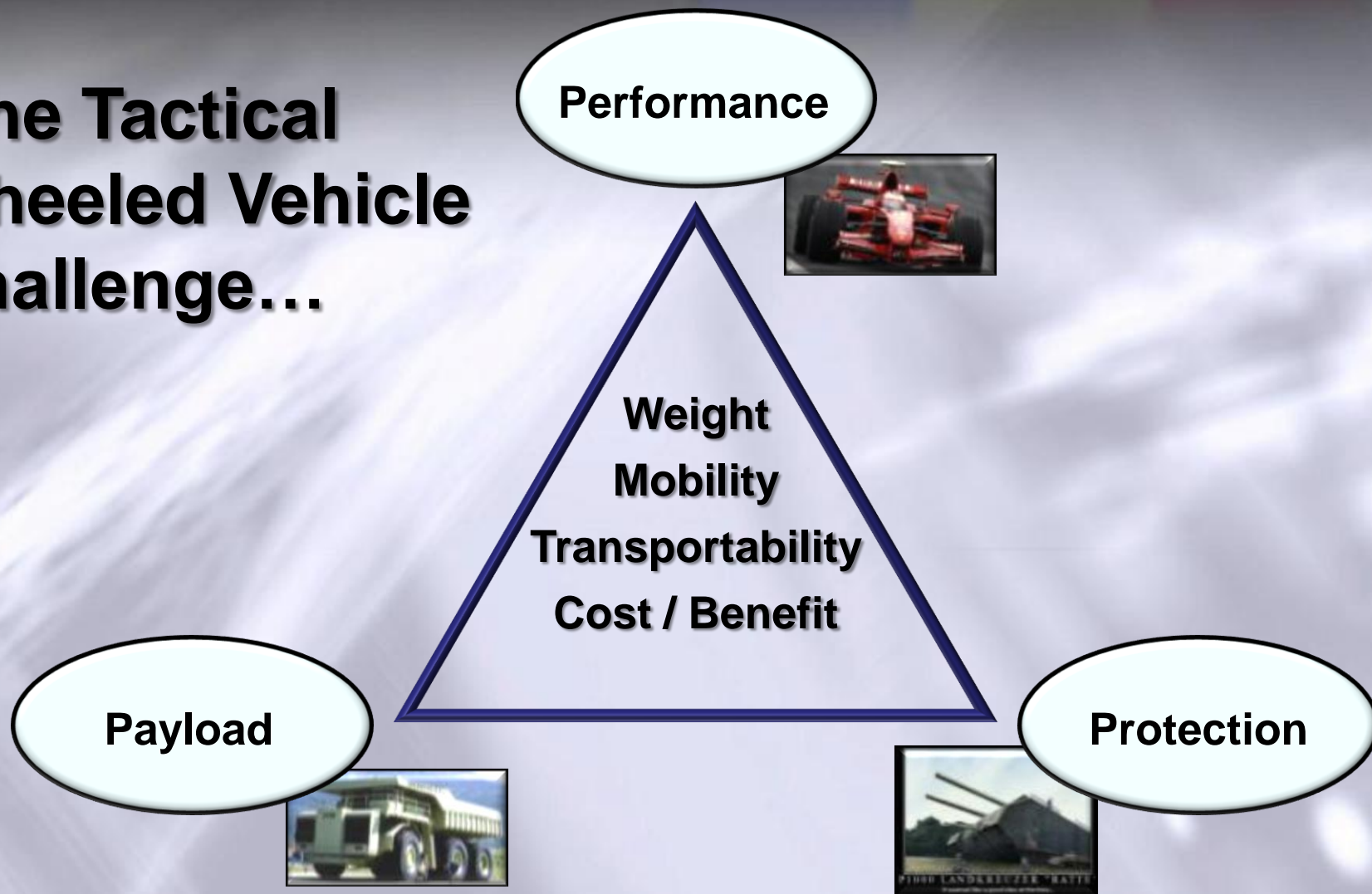
*versatile mix ...tailorable ...networked ...rotational cycle... sustained flow of ready forces for full spectrum opns ...hedge against unexpected ...sustain all-volunteer force*

### Capabilities to Joint Force Commanders

- organizations of
- well-trained soldiers
- possessing right skill sets
- with superior equipment
- employing sound doctrine
- led by competent and confident leaders who understand their organizations' potential
- and are empowered in combat by superior information
- supported by state-of-art facilities



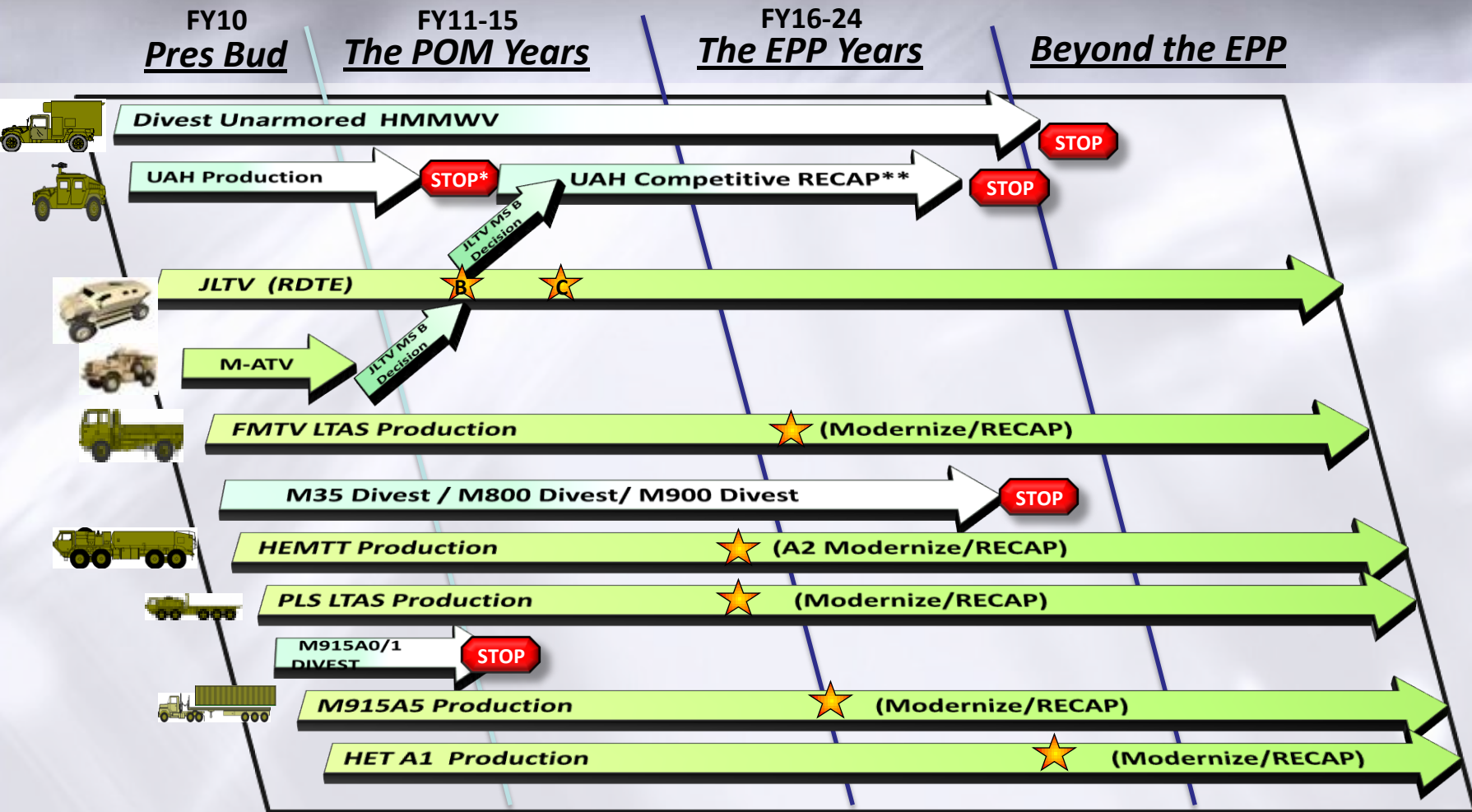
## The Tactical Wheeled Vehicle Challenge...



*The fully burdened cost of trucks and vehicles*



## TWV Modernization Strategy...



★ = Milestone Decision

★ = Decision Point

## Ground Combat Vehicle...

### Versatility

- Configuration and employment options
- Employed across full range of military operations
- Employed in combination with other vehicles
- Potential to adapt as technologies mature

### Force Protection

- Blast protection equivalent to MRAP
- Base level protection scalable to threat and mission
- Ability to observe 360 degrees (closed or open hatch)
- Integrate improved protection measures when they mature
- Fire protection equal to or better than current platforms

### Lethality

- Lethal self-protection to defeat like systems
- Hosts non-lethal systems

### Mobility

- Negotiates complex urban terrain
- Cross country mobility
- First GCV increment mobility equal to Bradley

### Sustainability

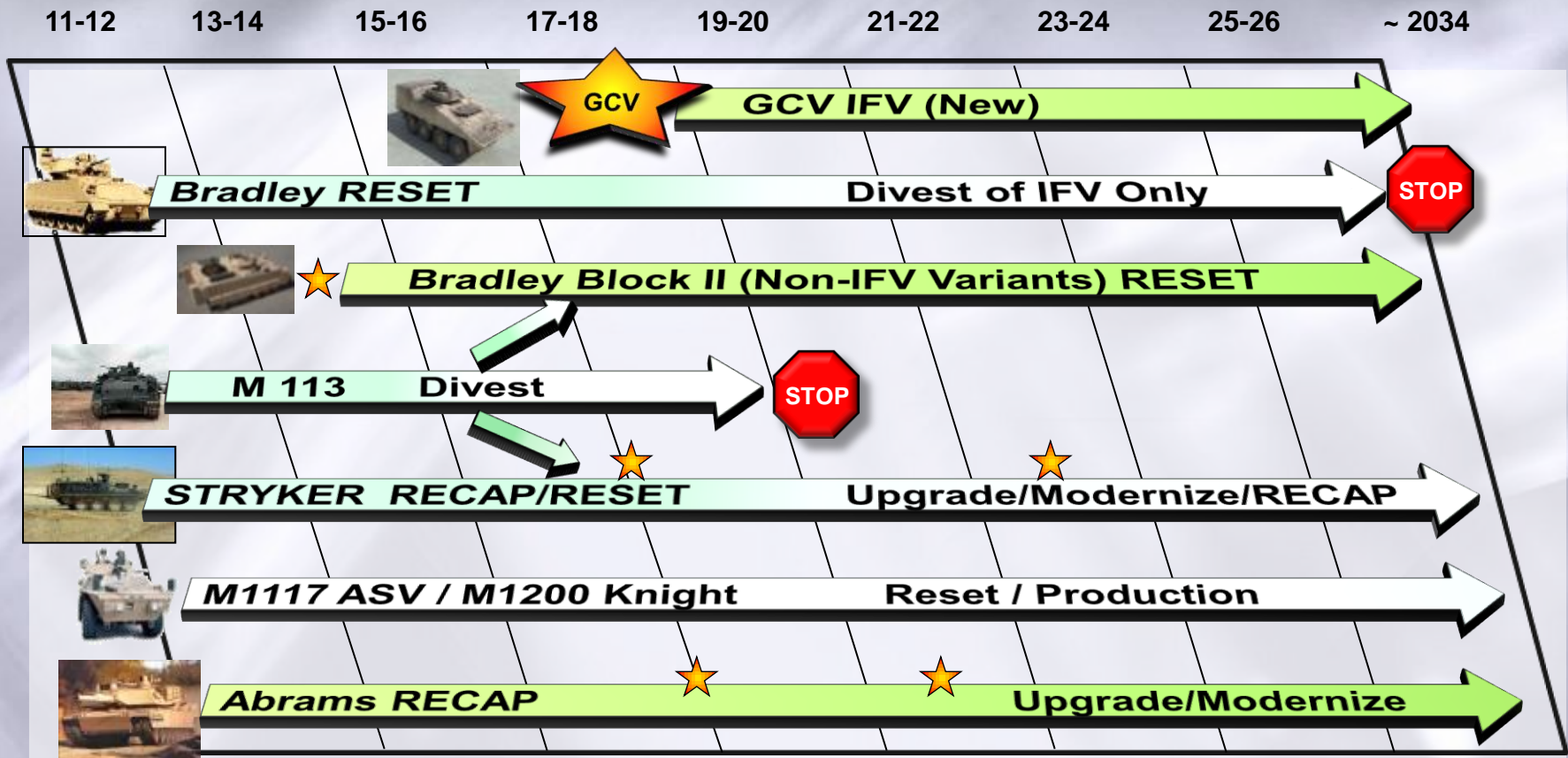
- Reduces the BCT sustainment burden
- Initial increment availability rate equal to Stryker
- Consumes 10% less fuel than current vehicles
- Exportable electrical power and battery charging

### Network Integration & Interoperability

- Hosts the Army's battle command network systems
- Growth potential in electrical and computing power
- Retains functionality with degraded networks
- Facilitates Soldier integration
- Enable employment of robotic systems



## Developing a Combat Vehicle Strategy...



★ = Increment Point

**“...robotics offer the potential to deploy appropriate combinations of manned and unmanned systems to perform an increasing range of tasks”**

**(Army Capstone Concept)**

## **Guiding Principles ...**

- **Robotics enable the humans**
- **Humans should not have to accommodate**
- **Early user and technology developer collaboration**
- **Use “system of system” to measure effectiveness**
- ***Get more from force structure ; Cost / Benefit***

## ***Operational Adaptability through Affordable Force Modernization***

- ✓ **Establish baselines**
- ✓ **Innovate – when opportunities meet needs**
  - ✓ **Learn, adapt, learn, adapt...**
- ✓ **Converge experimentation, exercises, and testing**
  - ✓ **Soldiers earlier**
  - ✓ **Establish constraints**
    - ✓ **Cost / Benefit**
    - ✓ **Risk**
  - ✓ **Motivate to Warfighter Outcome**
    - ✓ **Speed matters**

***Buy fewer, more often***



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