



NDIA TWV Conference

Toward a Comprehensive Vehicle Strategy supporting *the Decisive Edge...* Our Soldiers and Small Units

LTG Michael A. Vane

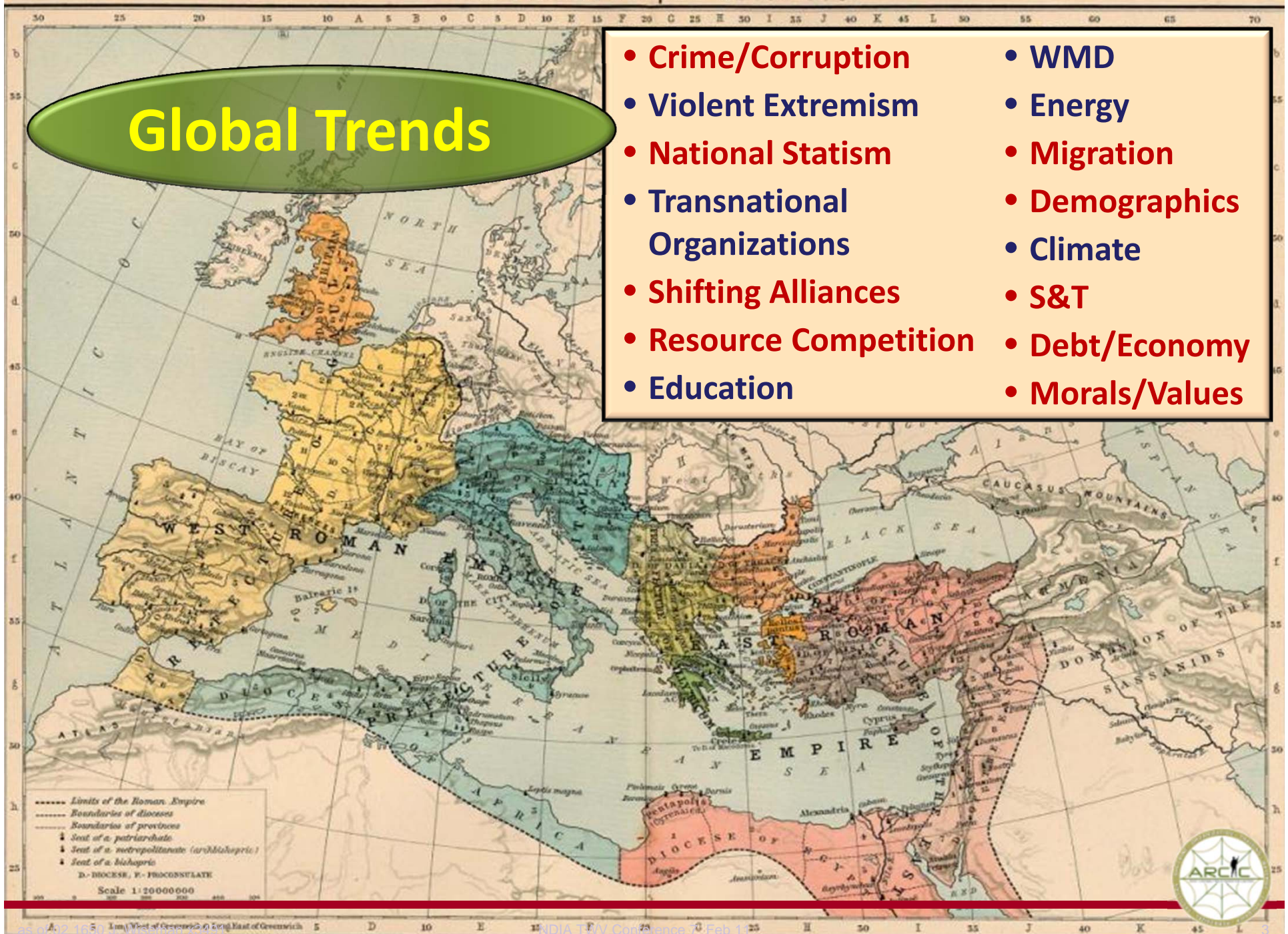
Deputy Commanding General, Futures and
Director, Army Capabilities Integration Center
US Army Training and Doctrine Command

7 Feb 2011



Global Trends

- Crime/Corruption
- Violent Extremism
- National Statism
- Transnational Organizations
- Shifting Alliances
- Resource Competition
- Education
- WMD
- Energy
- Migration
- Demographics
- Climate
- S&T
- Debt/Economy
- Morals/Values



What We Need Army Forces To Do...

Leaders, Soldiers, and units must exhibit **operational adaptability**

- Conduct **combined arms maneuver**; defeat the enemy in close combat and seize and retain the initiative
- Conduct **wide area security** (include population security)

- Understand complex situations in width, depth, and context
- Build and maintain relationships with diverse partners to achieve unity of effort
- Connect operations to strategy; ensure progress toward policy goals
- Conduct sustained engagement to build partner capacity, prevent conflict, and prepare for contingencies
- Overcome anti-access and area denial capabilities; help ensure freedom of action in maritime and aerospace domains
- Conduct reconnaissance in close contact with enemy and civilian populations
- Employ a combination of defeat and stability mechanisms to accomplish the mission
- Conduct and sustain operations from and across extended distances
- Protect information and communications systems; enable ability to fight degraded
- Operate under conditions of transparency (24-hour news, internet)

Metrics

- Lethal
- Agile
- Expeditionary
- Interoperable
- Versatile
- Sustainable
- Affordable



Soldiers and Small Units...

Our Decisive Edge

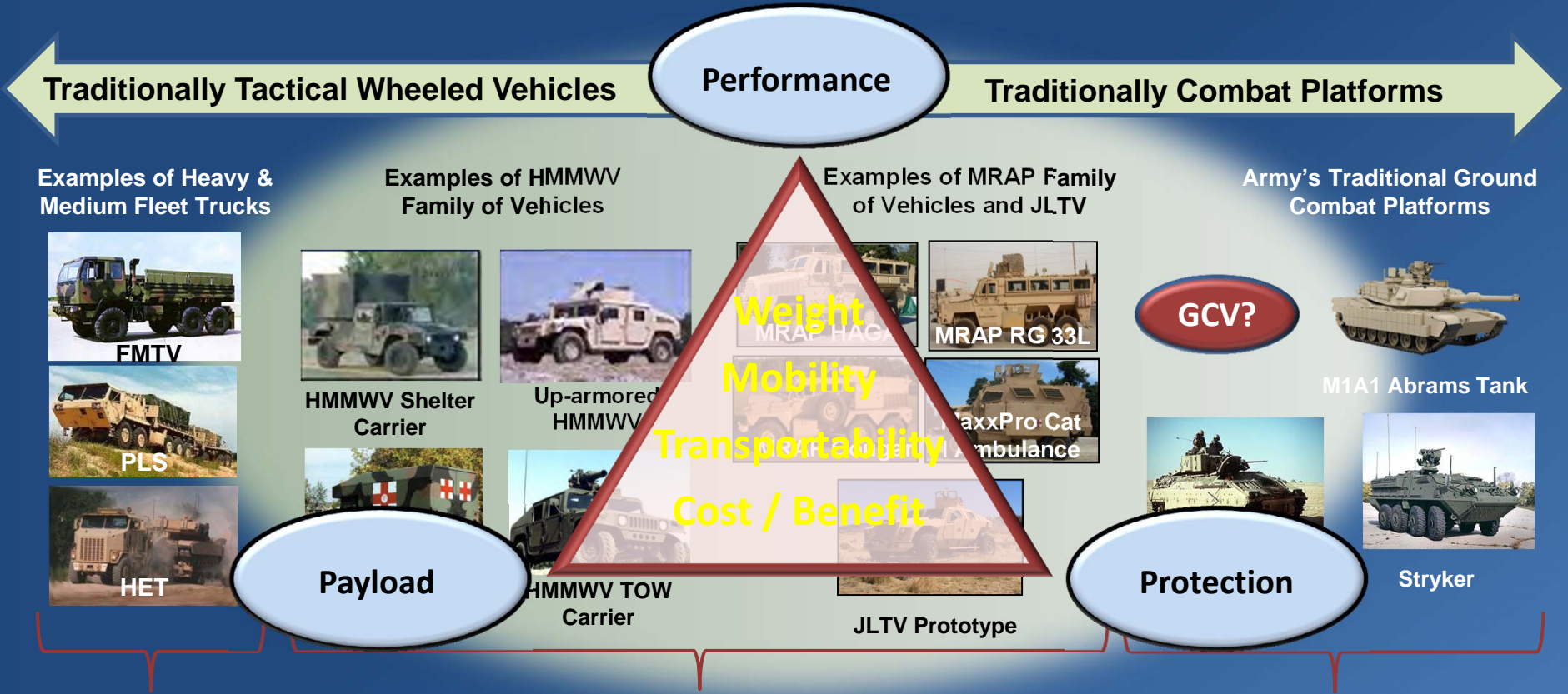
- **Lethal**
 - **Agile**
 - **Expeditionary**
 - **Interoperable**
 - **Versatile**
 - **Sustainable**
 - **Affordable**
- **Protected**
- **Connected**

Much more than a weapon system!



A Comprehensive Vehicle Strategy...

Major Challenge: No single TWV system balances the iron triangle of payload, performance and protection along with transportability



Distinct Combat Service Support missions

Multiple Combat, Combat Service, and Combat Service Support mission roles to include recon, convoy operations, troop transport, CASEVAC, Heavy Guns Carrier, C2OTM, Combat Engineer and EOD missions for maneuver units

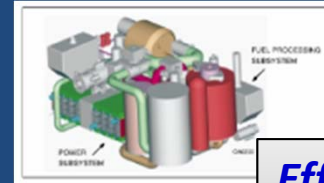
Distinct Combat mission roles (although Stryker and Bradley Hull designs can be used for CSS variants, i.e., Ambulance)



S&T Investment in Tactical Wheeled Vehicles...

National Automotive Center

- Fuel Cell APU
- Alternate Fuels

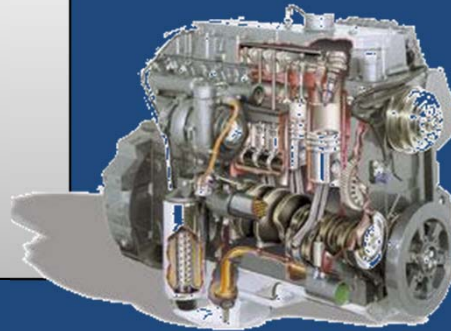


Efficient Power Sources

- JP-8 Diesel Reformer
- Fuel Cell APU Development

Prognostics / Diagnostics

- Modeling
- Sensors
- Conditioned Based Maintenance



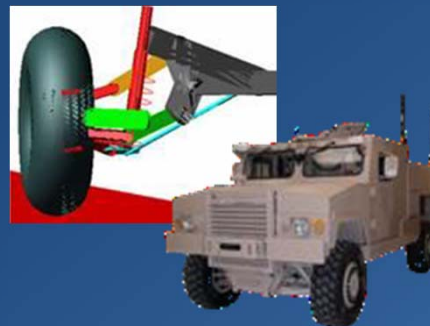
Advanced Mobility/Drive

- Commercial Engines using JP8
- Lightweight Track
- Hybrid Electric TWV Components

Recent successes...

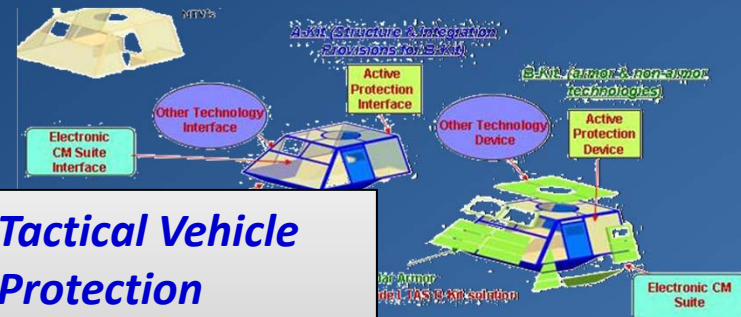
Wheeled Vehicle Power & Mobility

- Optimized diesel engines
- Hybrid Electric TWV Technologies
- Advanced suspension system



Tactical Vehicle Protection

- Integrated Armor
- Blast Crew Protection
- Demo integrated survivability suite



Robotics... Dirty, Dull, and Dangerous





NDIA TWV Conference

Toward a Comprehensive Vehicle Strategy supporting *the Decisive Edge...* Our Soldiers and Small Units

LTG Michael A. Vane

Deputy Commanding General, Futures and
Director, Army Capabilities Integration Center
US Army Training and Doctrine Command

7 Feb 2011

Back-up



Users view of S&T...

Emerging Challenges

- Education
- Network (Mobile)
- Information Fusion
- Secure Energy Sources
- Mobility: Strategic, Operational, Tactical
- Enhanced, Scalable Lethality

Baseline: “Big Five Warfighter Outcomes.”

- Training
- Mission Command
- Countering IEDs
- Power & Energy
- Human Dimension

...Focused S&T



Emerging Soldier Norms...



Electromagnetic Spectrum
Culture and Language Proficiency
Complex Problem Solving
Site Exploitation
Digital and Space Literacy
Negotiating Skills

2.15% 13.6% 34.1% 34.1% 13.6% 2.15%

