Towards a Comprehensive Vehicle Strategy

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## Revised Assumptions About the Future

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*as of 09 0830 Oct 09 J. Wiseman x3491 Combat Vehicle Conference 13 Oct 09*
Key Lessons Learned

• Provide Soldiers protected mobility: #1 priority

• Develop fighting vehicle for complex environments including urban operations

• Reduce predictable travel on established routes: better off-road mobility required

• Design platforms with sufficient growth potential for future capabilities

• Increase platform capacity to meet evolving threat

• Obtain better C2 on-the-move capability

• Push real time situational awareness to and from Company level and below

• Connect the Soldier to the network

Greater demand on small unit operations dictates that tactical vehicles must be protected, mobile, and networked
Capability Packages

Spin-outs + Warfighter Urgent Requirements = Capability Packages

- Provides incremental improvements delivered in two-year cycles
- Enables ARFORGEN beginning FY11
- Incorporates capabilities requested by Commanders in the fight

Future Capability Packages will include:
- More capable Unmanned Air Vehicles (greater range, loiter and payload capability)
- Larger Unmanned Ground Vehicles
- Improvements to the Network (more information and imagery at lower levels)

Provides increased near-term capabilities to the Warfighter
Network Modernization

- **Battle Command Essential Capabilities**
- **Two-year increments**
- **Field to ARFORGEN specified forces**
- **Affordable**

**Match Pace of Change with Technology and Operating Environment**
**Combat Vehicles Methodology**

**Key Attributes**
- Versatility
  - Roles
  - Functions
  - Scalability
- Force Protection
- Survivability
- Mobility
- Lethality
- RAM (Reliability, Availability, Maintainability)

- Align to force mix
- Incorporate MRAP
- Combat Vehicle Roadmap
  - Reset
  - Upgrade
  - Divest
  - New
Versatility

Force Protection

Network Integration & Interoperability

Mobility

Sustainability

Lethality

Transportability
Resource Informed, Incremental Approach

- Use strategy and risk assessment to drive procurement, rather than the other way around
- Move timelines for concepts and assessments in closer
- Trade across warfighting functions, formations, & Services
- Develop integrated DOTMLPF solutions
- Strengthen synchronization with Training and Leader Development
- Prioritize capabilities and align with ARFORGEN
- Synchronize decision points for budget, POM, and force structure
- Design to technology readiness and costs
- Interface operational requirements work earlier with S&T
- Conduct earlier and better cost benefit analysis
- Buy less, more often

Build a **versatile mix of tailorable and networked organizations**, operating on a **rotational cycle**, to provide a **sustained flow** of trained and ready forces for **full spectrum operations** and to hedge against **unexpected contingencies** at a **sustainable tempo** for our all-volunteer force.
Insights for Future Developments

• Improve Force Protection
  – Fire Suppression
  – Active Protection Systems
  – Reactive Armor at Lighter Weights

• Power and Energy
  – Energy Efficiency
  – Exportable Power
  – Power management on Vehicles
  – Enhanced Thermal Management on Board
  – Directed Energy

• Generating Non-lethal Effects from 50-500 m
• All Weather Sensor Capability
• Combat Identification
• Optics Defeat Capabilities
• Human Dimension
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Back-up
**GCV ICD Capability Gaps**

**Protection and Survivability**
- Detections and neutralization of mines and IEDs, from standoff
- Armored vehicle underbelly protection & crew protection against IEDs and mines
- Armored and light vehicle protection against kinetic, chemical, and tandem blast warheads
- Occupant protection against IEDs and mines

**Network**
- Non-interrupted communications for dispersed units
- Mounted and dismounted SA and communications, especially for dispersed units
- Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance embedded at all echelons

**Mobility**
- Maneuver for positional advantage across range of terrain
- Non-maneuver element mobility and survivability

**Lethality**
- Direct fire overmatch against high threat targets
- Non-lethal weapons to achieve effects while limiting casualties and collateral damage
- Organic precision indirect fires, especially in support of dispersed units
- Sensor-to-Shooter for cooperative engagements

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**Risk Assessment all BCTs**
- ★ Current Force (2010)
- ★★★ Upgraded Platforms (2017) (Included in POM)
- ★★★ Upgraded Platforms (2017+) (Not in the POM)
GCV ICD Recommended Solutions

- **Non-material solutions.**
  - D, O, T, L cannot satisfy all capability gaps related to combat vehicles

- **Materiel Solutions Assessed**
  - Current COTS/GOTS vehicles
  - Recapitalization of existing vehicles
  - New Start

- **GCV new start (Modified Off the Shelf or New Design) will**
  - Increase versatility
  - Provide protection equivalent to MRAP (Initial increments) and better off-road mobility (mobile armored protection)
  - Allow growth to integrate improved protection measures and other technologies as they mature (Future increments)
  - Reduce logistics
  - Support integrated battle command systems (Soldier in the Network) in complex terrain.
  - Provide lethal self-protection to defeat like systems while hosting non-lethal systems to enable operations among populations

- **Recapitalization (upgrades of current vehicles) will help mitigate some capability gaps during GCV development**
Communications Network

- Aerial Tier to extend or expand communications network to meet commander’s priorities
- Simplify Network Management by integrating current collection of network management toolsets
- Federate multiple Networks supporting the BCT, focusing on Trojan Spirit & CSS/VSAT
- Enable BCT access to JIIM to support specific functions and meet critical information delivery standards

Battle Command Applications

- Across Echelons
  - Provide standard Geospatial foundation that can be used for precision targeting, and locations by every Command Post, platform and dismounted leader
- Battalion and Above
  - Reduce physical footprint of the Maneuver Battalion & BCT TOCs by 15% of its current square footage
  - Provide Battalion & Brigade Commanders the ability to use Battle Command applications in their vehicle anywhere on battlefield
- Company and Below
  - Reduce latency by 10X for C2 & SA information exchange
  - Provide ability to send & receive still Imagery from/to battalion and down to squad leader
Context of Future Armed Conflict

Defense Priorities

Defend the Homeland // Win the Long War // Promote Security // Deter Conflict // Win our Nation’s Wars

Comprehensive Lessons Learned
- Counterinsurgency operations
- Stability operations
- Urban operations
- Full Spectrum Operations
- Security Force Assistance
- Training for Full Spectrum Operations
- Modernization, Acquisition, Generating Force

Operational Environment
- Extended Distances
- Access Limitation
- Among the People
- Complex Terrain
- Systems Warfare
- Rapid Tactical Transition

CCJO
- Combat
- Security
- Engagement
- Relief/Reconstruction

CSA White Paper
- Deter and defeat hybrid threats
- Prevail in protracted COIN campaigns
- Engage to help others build capacity
- Support civil authorities home and abroad

Capstone Concept 2009
- Assist Foreign Security Services
- Entry & Shaping Operations
- Inter- and Intra-Theater Operational Maneuver
- Simultaneous Offensive, Defensive, and Stability (or Civil Support) Operations
- Distributed Support & Sustainment
- Network Enabled Mission Command