Ground Combat Vehicle
Lethality

Gus Steenborg
Mounted Requirements
US Army Maneuver Center of Excellence
Bottom Line Up Front

“... we will ensure that our military is agile, flexible, and ready for the full range of contingencies ...”

President Barak Obama
Defense Strategic Guidance
3 January 2012
Maintain the battlefield primacy of our Soldiers and the formations in which they fight!
Mounted Requirements Portfolio

- **Combat Vehicles**
  - Ground Combat Vehicle (GCV)
  - Armored Multipurpose Vehicle (AMPV)
  - Abrams
  - Bradley
  - Stryker
- **Tactical Ground Reconnaissance Sensors**
- **Large and Medium Caliber Lethality**
- **Mounted Soldier System**
- **Tactical Vehicles**
  - Mine Resistant Ambush Protected (MRAP)
    - MRAP All Terrain Vehicle (MATV)
  - Joint Light Tactical Vehicle (JLTV)
Emerging Trends in the Operational Environment

Uncertainty
Location, Adversaries, Context, Duration

Dynamic combinations of conventional, irregular, terrorist and criminal capabilities

Hybrid Threats

Pace of Change
Exponential, not Arithmetic

Increased Competition
Rising powers, organized militias, technology as a leveler

Military Power in the 21st Century will be defined by our ability to adapt

Decentralization
Networked Forces, Dispersed Among the People
Combat Vehicle Capabilities

- Shoot
- Move
- Communicate
- Survive
- Sustain
- Adapt

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# Capability Evolution

<table>
<thead>
<tr>
<th>WWI</th>
<th>WWII</th>
<th>Desert Storm</th>
<th>Full Spectrum</th>
<th>Future Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT-17</td>
<td>M4 Sherman</td>
<td>M1A1 Abrams</td>
<td></td>
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<tr>
<td>900 US M1917 Tanks</td>
<td>50,000 produced in</td>
<td>6,000 produced</td>
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<tr>
<td>produced after WWI</td>
<td>several variants</td>
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</tr>
<tr>
<td>Shoot</td>
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<tr>
<td>37mm (1MJ) Cannon</td>
<td>76mm (5 MJ) Cannon,</td>
<td>120mm (10MJ) Cannon</td>
<td>20+ MJ Main</td>
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</tr>
<tr>
<td></td>
<td>2 x .30 Cal; .50 Cal MG</td>
<td>2 x 7.62mm; .50 Cal MG</td>
<td>Weapon</td>
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<tr>
<td>Move</td>
<td></td>
<td></td>
<td>Lethal &amp; Non</td>
<td></td>
</tr>
<tr>
<td>42 hp Gasoline engine</td>
<td>400-500 hp Gasoline engine</td>
<td>1500 hp Multi-fuel</td>
<td>Lethal</td>
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<tr>
<td>5.5 mph</td>
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<td>turbine engine</td>
<td>&amp; Non Lethal</td>
<td></td>
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<tr>
<td>15 mph off-road</td>
<td>15 mph off-road</td>
<td>33 mph off-road</td>
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<tr>
<td>26 mph on-road</td>
<td>26 mph on-road</td>
<td>45 mph on-road</td>
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<td></td>
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<tr>
<td>30 mile range</td>
<td>100 mile range</td>
<td>300 mile range</td>
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</tr>
<tr>
<td>Communicate</td>
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<tr>
<td>Semaphore</td>
<td>Radio Voice</td>
<td>Encrypted Radio Voice</td>
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<td>Mission Command</td>
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</tbody>
</table>

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Capabilities Development & Integration Directorate

Mounted Requirements Focus Areas

- Force Protection / Survivability
- Computation Capacity / C4 Systems
- Mobility
- Lethality
- Sensors
- Support Technology and Force Structure
- Robotics
- Power and Energy
- Soldier Platform Interface

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