

AMERICA'S ARMY: THE STRENGTH OF THE NATION™



NDIA Executive Seminar “Warfighter’s Perspective”

22 April 2009

Army Imperatives

- **SUSTAIN** – our Soldiers, Civilians and Families
- **PREPARE** – Soldiers for success
- **RESET** – to restore readiness and depth for future operations
- **TRANSFORM** – to become the Army the Nation needs today and in the future

DID YOU KNOW?

- **MG Dave Halverson**, Director, Force Development, Office of the Deputy Chief of Staff, G8
- **BG Mark McDonald**, Deputy Commanding General, III Corps and Ft. Hood
- **MG Jim Hodge**, Commanding General, Military Surface Deployment and Distribution Command
- **MG Arthur Bartell**, Commanding General, U.S. Army Cadet Command

National Defense Industry Association Conference

III Corps and FT Hood
Deputy Commanding General

Brigadier General Mark McDonald

April 22nd, 2009

Outline

- Example of how industry answered our urgent needs: C-RAM
- Examples of what is still needed
 - Autonomous Robots
 - Capacity Building Training Tools

III Corps Robotics Initiative

III Corps CG Intent

Establish a Robotic Systems Center of Excellence at Fort Hood, Texas by merging industry, DOD, and Fort Hood capabilities and resources to develop and employ autonomous robotic systems using spiral development – ultimately increasing the combat capability of deployed forces while saving Soldiers' lives.

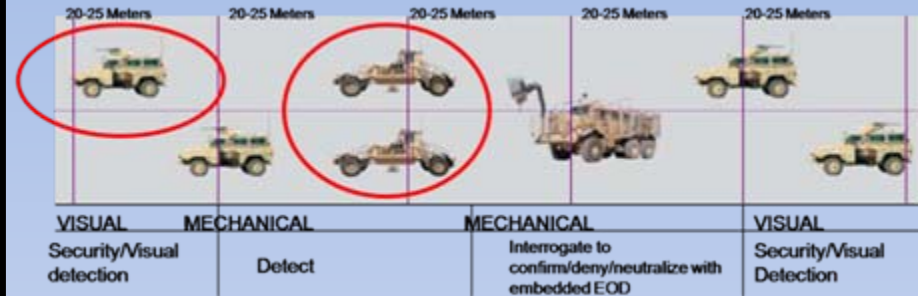
Top Four (Autonomous) Robotic Priorities

- Route Clearance – To detect, defeat, and neutralize the effect of roadside Improvised Explosive Devices (IEDs).
- Robotic Logistic Convoys – To move classes of supply from point A to point B using a vehicle set consisting of autonomous robots.
- Persistent Stare – To enable long duration monitoring of a targeted area from a point of observation with a various array of sensors.
- Robotic Wingman – To add a combat system that autonomously follows, maneuvers parallel, and can lead a manned wingman at a prescribed distance and position while detecting and avoiding obstacles .

Movement & Maneuver Applications

Route Clearance

- 4 times a day mission
- High Risk/Labor intensive
- Maintain manned security elements and mechanical integration capabilities



Robot Capabilities Required:

- Autonomous Route navigation
- Autonomous Leader / Follower
- Reacts to changes in road conditions, obstacles
- Obeys traffic rules
- Does not increase risk to humans

Current Assessment:

Can be done with technology demonstrated in Demo 3 and the DARPA Urban Challenge (November 2007)

✓ Autonomous Navigation

✓ Obstacle Avoidance

✓ Leader-Follower

– Aided Target Recognition (ATR) not ready (need human in loop to enable target recognition)

Sustainment Applications

Robotic Logistic Convoys

- Movement of supplies and equipment
- Enhances Brigade Support Battalion or Regiment Support Squadron in the performance of Resupply Operations
- Recovery Operations



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Current Assessment:

Can be done with technology demonstrated in Demo 3 and the DARPA Urban Challenge (November 2007)

✓ Autonomous Navigation

✓ Obstacle Avoidance

✓ Leader-Follower

- Numerous products/program/prototypes in this area

– Current Safety release requires:

– constant manual monitoring

– immediate override capability

Surveillance Persistent Stare

- Persistent Stare - Sensors don't get bored/fall asleep
- High risk to Soldiers
- Sustainment = Power Source (battery)



Robot Capabilities Required:

- Autonomous Route navigation to observation posts
- Ride in or keep up with current vehicles
- Tele-operation (sensors and/or weapons) within range of Bradley 25mm
- Sufficient mobility to get to key terrain

Current Assessment:

- ✓ Autonomous Navigation
- ✓ Obstacle Avoidance
- ✓ Requires varying degrees of sensor integration, but most are attainable
- ✓ Tele-operation sensors/weapons out to 3000 meters demonstrated @ Fort Benning, GA
- Still need the ability to detect classify and identify human beings, vehicles, etc

Movement & Maneuver Applications

Robotic Wingman

Combat Multiplier

- Removes unnecessary Soldiers from battlefield
- Additional firepower/force protection without additional personnel



Robot Capabilities Required:

- Autonomous Route navigation/obstacle avoidance (environmental awareness)
- Leader-Follower relative sensory awareness
- Automatic Target Recognition/IFF
- Comparable mobility to support manned system

Current Assessment:

- ✓ Autonomous Navigation
- ✓ Obstacle Avoidance
- ✓ Requires varying degrees of sensor integration, but most are attainable
- ✓ Requires Automatic Target Recognition/IFF

III Corps Capacity Building

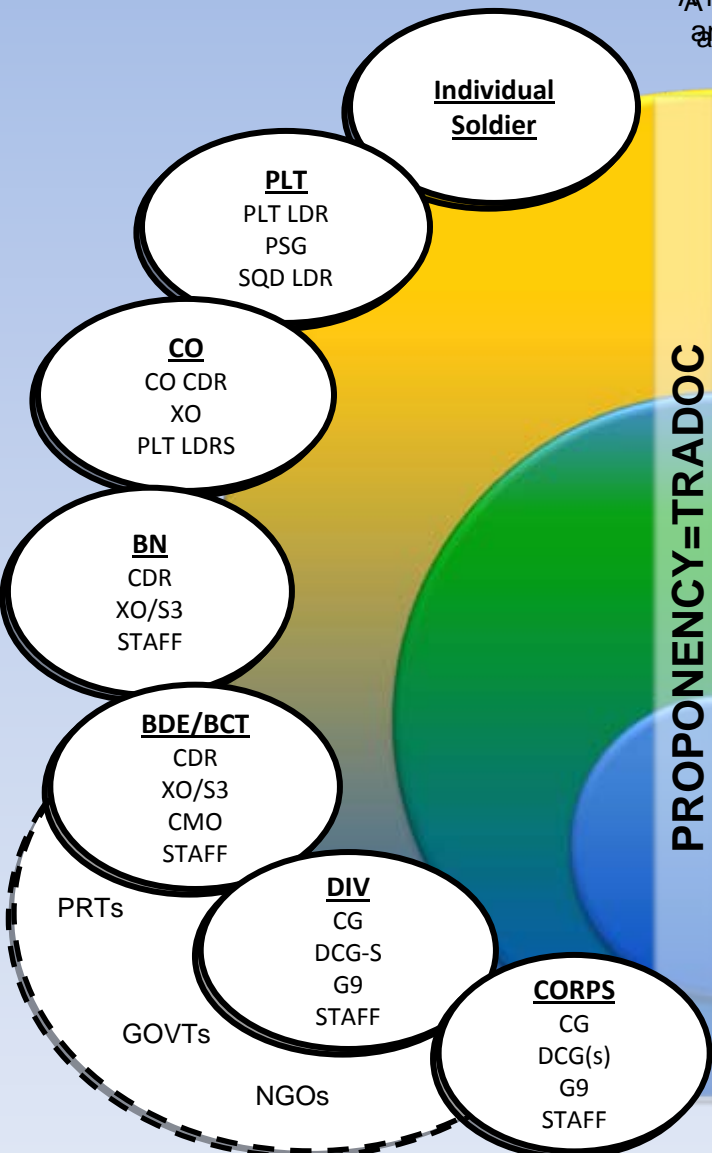
Defining the Problem

In a period of global persistent conflict and Full Spectrum Operations (FSO), the Department of Defense (specifically the U.S. Army and U.S. Marine Corps) lacks a holistic training strategy, knowledge base, and individual - collective skill sets to execute Capacity Building to transition to civil authorities.



Capacity Building Training Strategy

A holistic approach to educating, training and sustaining individual Soldiers, leaders, staffs, and units from platoon through Corps to effectively support non-lethal "Capacity Building" operations in an austere environment.



PROPENSITY=TRADOC

<p>Tools: Partnerships Distance Learning (DL)/Online Courses LFDs/OPDs Correspondence Courses Site Visits Formal Assessment Training</p> <p>A continual process intended to increase knowledge and expertise at the individual and collective levels from platoon through Corps levels to capitalize on a holistic leader development approach based on DMETL, availability of leaders/staffs, and focus their timeline on validation during their MRE.</p>	<p>Education</p> <p><i>Lead: CAC</i></p> <p><i>Crawl-Walk-Run</i></p>
<p>Tools: Urban Interactive Development Simulations "Sim City" S.E./N.S.E.* WFX</p> <p>To address the outcome of an individual's chosen non-lethal effects decision(s). The adaptability of the program can include multiple players working to achieve a common endstate based on the intensity (difficulty) level, theme, and environment selected at the opening of the game.</p>	<p>Simulations/Gaming</p> <p><i>Lead: CAC/TRADOC</i></p> <p><i>Walk-Run</i></p>
<p>Tools: Corporate and Government Integration Exchange Programs Government Partnerships</p> <p>Key leaders work closely with the equivalent level of governance (City, State, Regional, National) at (or near) home station that they will most likely partner with during deployment to enable key leaders to gain a better understanding of the complexities of building and sustaining capabilities in support of a given size population.</p>	<p>Embed</p> <p><i>Lead: Units, Agencies, and Institutions</i></p> <p><i>Run</i></p>

This program should be directly linked to the Provincial Reconstruction Team (PRT), Government (GOVT) and Non-Government Organization (NGO) training processes to develop teams and ensure unity of effort during deployment.



Supporting the Warfighter End-to-End

Experiences from SWA and Stateside

SD

Military Surface
Deployment and

Distribution Command

DC

MG Jim Hodge

Commanding General

Class VII Retrograde



MRAP Fielding



End-to-End Support



Afghanistan/Pakistan



SD

Class VII Retrograde



MRAP Fielding



End-to-End Support



Afghanistan/Pakistan GLOC



SD

Class VII Retrograde



MRAP Fielding



End-to-End Support



Afghanistan/Pakistan GLOC



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End-to-End Support

Afghanistan/Pakistan GLOC



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End-to-End Support



Afghanistan/Pakistan GLOC



SD

Class VII Retrograde



MRAP Fielding



End-to-End Support

Afghanistan/Pakistan GLOC



SD

National Defense Industrial Association 2009

“Human Capital”

**United States Army
Accessions Command**



ARMY STRONG.™

The Facts

Did you know annually,.....

- **The Army Enlists 80,000+ Active Duty Soldiers**
- **The Army Enlists 26,000+ Reserve Soldiers**
- **Army ROTC has 30,000+ Cadets and commissions
5,000+ Lieutenants at 273 Host and 1,100
Partnership Universities**
- **Army OCS commissions nearly 2,000 Lieutenants**
- **USMA commissions nearly 1,000 Lieutenants**
- **Junior ROTC has 288,000+ Cadets at 1,645 high
school and will expand to 265 more schools**



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Strategic Partnership for America's Success

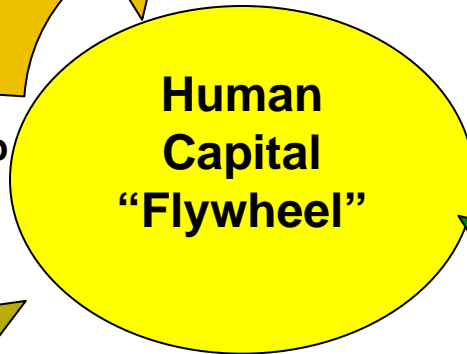


3. Partnership for Youth Success

1. US Army Recruits the Talented and Fully Qualified



Agile
Adaptive
Smart
Energetic
Talented
Tech Savvy



2. 21st Century Training



By The Way...

National Defense Cadet Corps ... A Way To Give Back



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“Human Capital”

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QUESTIONS?

