

Robotic Systems Joint Project Office



NDIA Briefing

30 October, 2007



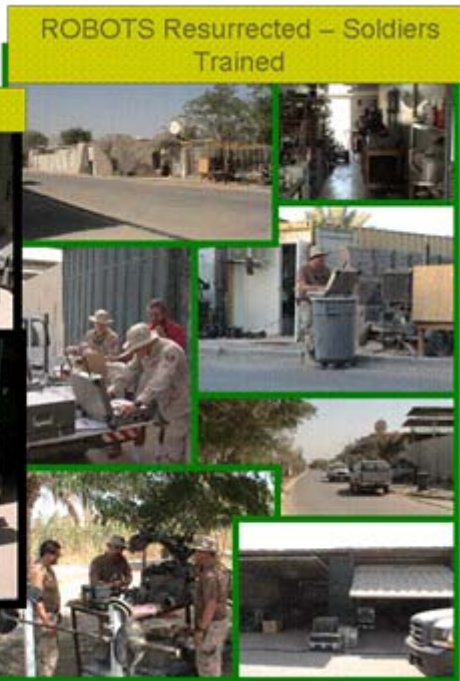
Our Mission

Credibility • Capability • Cost

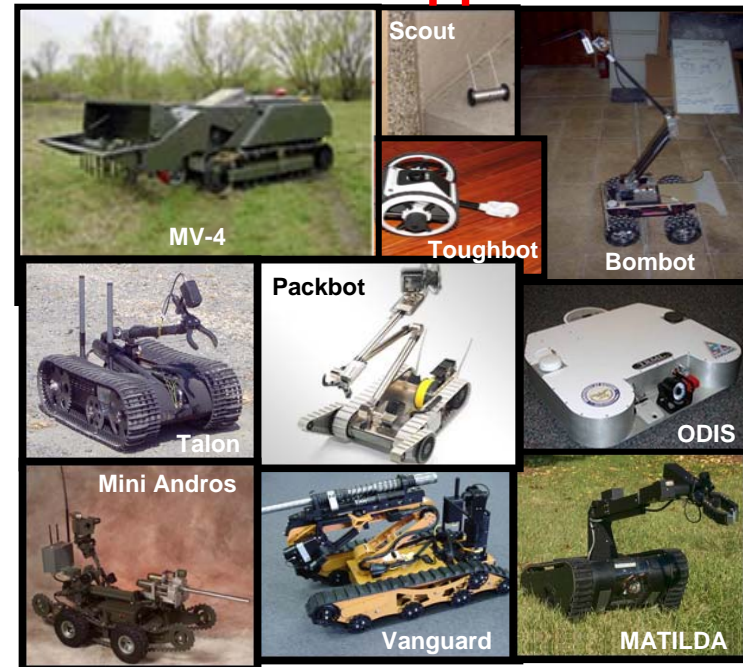
Adapting to the Changing World



Mission



Robots Supported



Over 5,000 Robots OIF/OEF in 2007

The World Changed...

Credibility • Capability • Cost



Credibility • Capability • Cost



Evolution of Ground Robotics in War

2003 22 Systems

- Afghanistan
- 12 Packbots / 6 MATILDAs
- 4 Mini Flails
- No Support

2004 162 Systems

- No Single Vendor Could Produce 162
- 5 Vendors, Multiple Configurations
- Joint Effort, EOD Focused
- Joint Robotic Repair Facility Evolution

2005 1800 Systems

- Robots' Proven Ability to Save Lives
- Expansion Beyond EOD Mission (Countermine, Security)
- Recognition of Need for "Single Bellybutton"
- MOAs with AMC and REF

2006 4000 Systems

- Engineers & Infantry
- Route Clearance, Explosive Detection & Weaponization Development.
- Pre-Deployment Training and Joint Robot Repair Teams (JRRTs)
- Supply Chain Management of COTS

2007 5000 Systems

- Special Forces Robot Applications Assessed
- Route Clearance, Explosive Detection & Weaponization on Battlefield
- Pre-Deployment & JRRT Expansion Based on Increased Requirement
- Supply Chain Management Refined and Picked Up By Numerous Outside Programs

What Robots Can Do



*Accomplish the Mission...
...and Reduce Attrition*

2006 Measures of Effectiveness (OIF)



# of Missions	# of Found & Cleared IEDs	# of Destroyed Robots
30,000	11,100	150



- 16,000 Robot Repairs Conducted Annually
- Find and Clear Rate is Approximately 37%
- SOP is to Employ a Ground Robot first
- Bomb Suits Only used When Terrain Prevents Robot Employment

Ground Robots Out of Action



Credibility • Capability • Cost

Joint Robotic Repair Facility (OIF)



Credibility • Capability • Cost

OIF Ground Systems



Credibility • Capability • Cost

Gladiator



Credibility • Capability • Cost

Future Combat Systems Unmanned Ground Vehicles



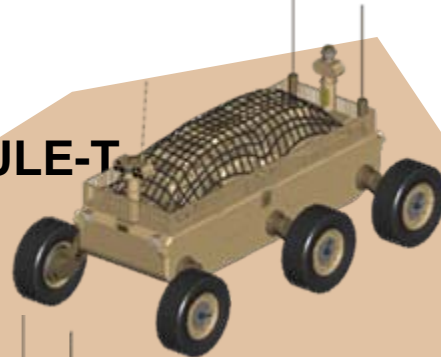
Optimized for
Dismounted Operations



SUGV
Manpackable

Mobility in
areas that are
too small for
soldiers

MULE-T



ARV-A(L)

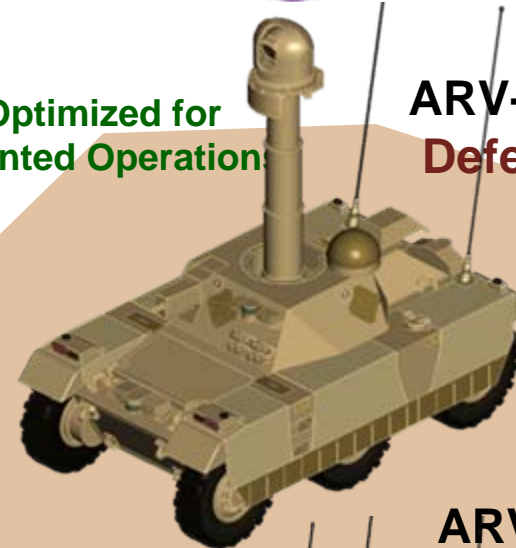


MULE-CM



UH-60 Helicopter
Transportable
Provide same mobility as soldier

Optimized for
Mounted Operations



ARV-RSTA
Deferred

ARV-Assault
Deferred



C-130 Transportable
Provide same mobility as
Manned Ground Vehicle (MGV)

Credibility • Capability • Cost

Challenges Ahead



- **CONOPS Beyond FCS**
- **Technology**
 - **EMI Environment**
 - **Processor Speed**
 - **Depth Perception**
 - **Autonomy Decision Algorithm**