

# Dual Use Material Developers Panel



BGen Michael Brogan, CG MARCORSYSCOM

Mr. Michael Asada, DPEO GCS

18 March 2010

# Report Documentation Page

*Form Approved*  
*OMB No. 0704-0188*

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE <b>17 MAR 2010</b>	2. REPORT TYPE <b>N/A</b>	3. DATES COVERED <b>-</b>	
4. TITLE AND SUBTITLE <b>Dual Use Material Developers Panel</b>		5a. CONTRACT NUMBER	
		5b. GRANT NUMBER	
		5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) <b>BGen Michael Brogan; Michael Asada</b>		5d. PROJECT NUMBER	
		5e. TASK NUMBER	
		5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>US Army RDECOM-TARDEC 6501 E 11 Mile Rd Warren, MI 48397-5000, USA</b>		8. PERFORMING ORGANIZATION REPORT NUMBER <b>#20609RC</b>	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S) <b>TACOM/TARDEC</b>	
		11. SPONSOR/MONITOR'S REPORT NUMBER(S) <b>#20609RC</b>	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release, distribution unlimited</b>			
13. SUPPLEMENTARY NOTES <b>Presented at NDIA Ground Robotics Capabilities Conference &amp; Exhibition, March 16-18, 2010, Miami FL, USA, The original document contains color images.</b>			
14. ABSTRACT			
15. SUBJECT TERMS			
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>SAR</b>
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>	
19a. NAME OF RESPONSIBLE PERSON			



# Evolution of Ground Robotics in War

## 2004

**162 systems**

- No single vendor could produce 162
- 5 vendors, multiple configurations
- Joint effort, EOD focused

## 2005

**1800 systems**

- Robot's proven ability to save lives
- Expansion beyond EOD mission (Countermine, Security)
- MOAs w/ AMC and REF

## 2006

**4000 systems**

- Engineers and Infantry
- Route clearance, Explosive detection & Weaponization development

## 2007

**5000 systems**

- Special Forces robot applications assessed
- Route clearance, Explosive detection & Weaponization on battlefield

## 2008

**6000 systems**

- Maneuver elements
- Range extension
- CBRNE detection
- Persistent surveillance
- RC HMMWV
- More capable payloads

## 2009

**7000 systems**

- Smaller platforms
- Enhanced battery life
- Enhanced commonality
- Remote deploy
- More capable payloads

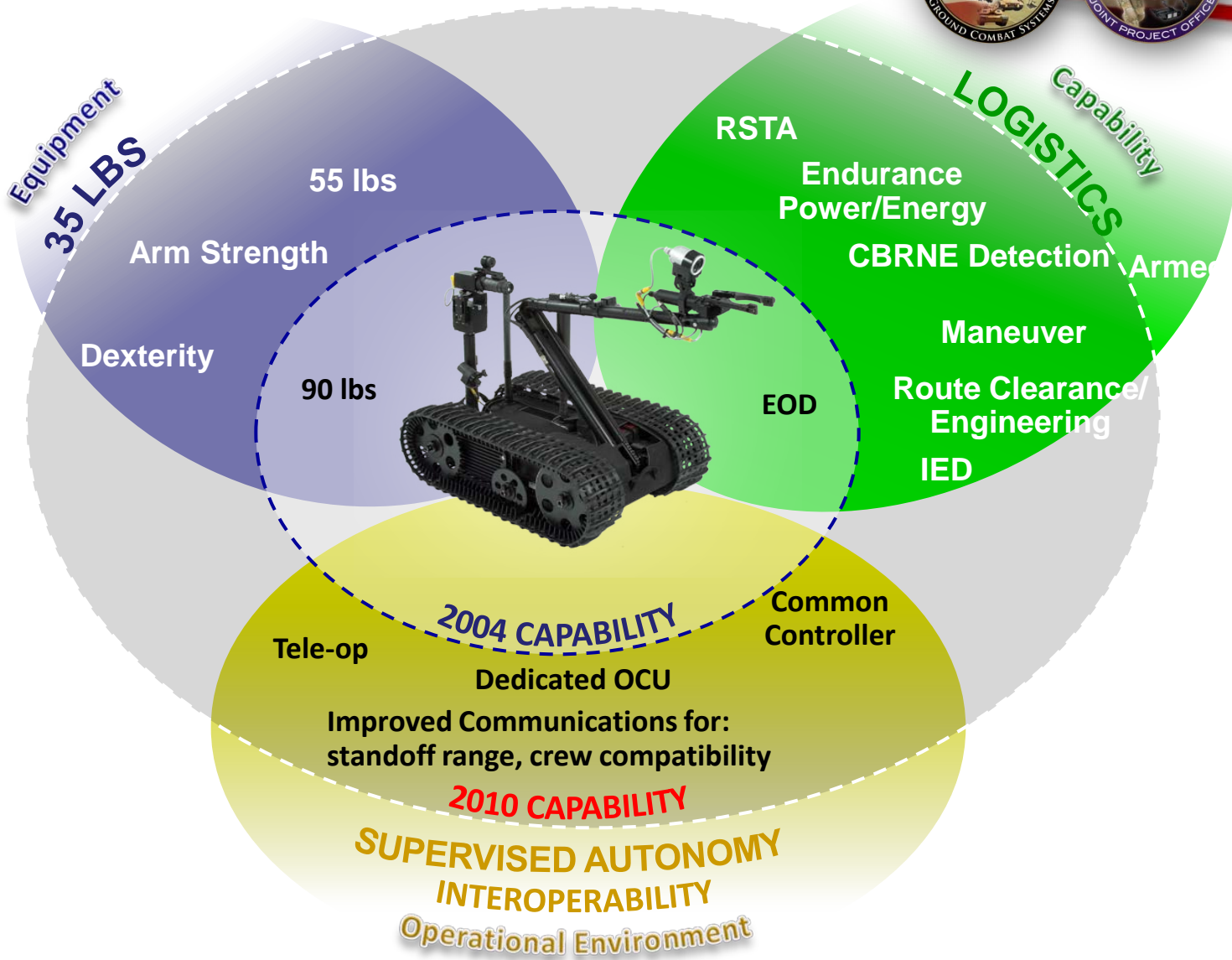
## Future

- Interop
- 'Plug and play' capabilities
- Limited autonomy
- Weaponization
- Increased agility & dexterity

Sustainment, Modernization, Interoperability and Modularity



# Robotic Modernization



**Enhancing Warfighter Capabilities**

# Joint Robotic Repair and Fielding JRRF



## BACKGROUND

- The Joint Robotics Repair and Fielding (JRRF) activity was established in mid 2004 to provide maintenance, supply and training for all Joint Service Non Standard Equipment Robotic systems.

## MISSION

- Provide in-Theater Support for Joint Service Theater Provided Equipment (TPE) Ground Robots. Serve as Single “Belly Button” “one-stop-shop” for fielding, sustainment, training, assessment and total asset accountability for all robotic systems, including Iraq and Afghanistan.

## SUPPORT

- Current JRRF operations
- Embedded repair teams to remote units
- Pre-deployment support capability at Combined Training Centers
- 13 JRRF detachments world wide



**Training, Sustainment, Assessment, and Accountability**



# RS JPO Systems

- Based primarily on ONS / JUONS requirements
- Commercial-off-the-shelf / modified-off-the-shelf
  - Commercial radios
  - Commercial components
  - Non MIL-STD
  - Obsolescence
  - Configuration control
- Procured under 'Rapid Acquisition'
  - REF and JIEDDO lead
- Provide immediate capabilities
  - 70 to 80% solutions

# Dual Use Technologies



- Obstacle detection & avoidance
  - Military: pedestrians, terrain and man-made obstacles
  - Civilian: automobile safety technologies – active cruise control
- Autonomous navigation
  - Military: resupply, dynamic path planning
  - Civilian: automobile safety technologies – active cruise control
- Increased communication range
  - Military: increased standoff
  - Civilian: command post (DHS/1<sup>st</sup> Responders), wireless networks
- Multi robot control
  - Military: one controller/many robots, manning levels
  - Civilian: warehousing
- Interoperability
  - Military: agile mission response
  - Civilian: USB ports, iPhone
- Improved battery technologies / fuel cells
  - Military: longer life, reduced soldier load
  - Civilian: fossil fuel dependence