Robots in the Fight — Making a Difference

Col Dave Thompson, USMC, Project Manager, Robotic Systems Joint Project Office

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Robotic Systems Joint Project Office (RS JPO)

The RS JPO is a dual service organization reporting to Marine Corps Systems Command (MARCORSYSCOM) and the Program Executive Office for Ground Combat Systems (PEO GCS) as the executive agencies for the acquisition of Unmanned Ground Vehicles (UGVs) for the Army and Marine Corps.

Mission

- Lead the development, systems engineering, integration, acquisition, testing, fielding, sustainment, and *improvement* of unmanned systems for the Joint Warfighter to ensure that safe, effective, and supportable capabilities are provided while meeting cost, schedule, and performance.

Vision

- An integrated family of robotic systems by 2020 that multiplies Force effectiveness, improves Warfighter survivability and assures battlefield dominance.
RS JPO Reporting Chains

Marine Corps Systems Command
Commanding General
BGen Frank L. Kelley, USMC
Quantico, VA

Program Executive Office Ground Combat Systems
Program Executive Officer
Mr. Scott Davis, SES
Warren, MI

Robotic Systems Joint Project Office
Project Manager
Col David Thompson, USMC
Warren, MI
RS JPO Current CONUS Locations

- NTC FT IRWIN
- MCAGCC 29 PALMS
- FT HOOD
- FT A.P. Hill Gator School
- TYNDALE AFB
- JRTC FT POLK
- HUNTSVILLE
- RSJPO HQ JRRF/SANGB (Inventory Control Point)
- MANSCEN FT Leonard Wood
RS JPO’s Joint Robotics Repair Detachment (JRRD) in Afghanistan

- Training
- Repair
- Distribute

Locations:
- Leatherneck
- Kandahar
- Sharana
- Mazar-E-Sharif
- Bagram

Map of Afghanistan showing key locations.
Evolution of Ground Robotics in Combat

• Sustainment, Modernization, Interoperability and Modularity

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)
• Agreements 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

2009-2010
7000 systems
• Military Police
• Smaller platforms
• Enhanced battery life
• Commonality
• Remote deploy
• More capable payloads

2011-Future
• Interoperability
• ‘Plug & play’ capabilities
• Limited autonomy
• Weaponization
• Increased agility and dexterity

Almost one third of robots issued to units in 2009-2010 went to units other than EOD and Combat Engineers.
Robots Currently in Combat

- Mini-EOD (SUGV-310)
- PackBot Family
- Recon Scout XT
- MARCBot
- TALON Family
- XM1216 Family
- M160
Lastly, as we reduce the overall defense budget, we will protect, and in some cases increase, our investments in special operations forces, in new technologies like ISR and **unmanned systems**, in space -- and, in particular, in cyberspace - -capabilities, and also our capacity to quickly mobilize if necessary.
Secretary of the Navy Priorities

1) Taking care of Sailors, Marines, Civilians and their families

2) Treating Navy energy requirements and solutions as issues of national security

3) Creating acquisition excellence

4) Optimizing unmanned systems
Secretary of the Navy
Unmanned Systems Goals

- Published November 17, 2010
- Addressed to all Navy and Marine Corps Acquisition Leadership

  » Field an integrated Family of Robotic Systems by 2020 to augment the capabilities of the MAGTF
  » Increase firepower: Provide one weaponized UGV section per infantry battalion to enhance offensive and defensive capabilities
  » Increase mobility & force protection: Equip and train Engineer battalions and Explosive Ordnance Disposal units with robots that are capable of conducting 75% of explosive obstacle reduction/neutralization missions.
  » Enhance ISR: Equip all maneuver units (from squad through battalion) with autonomous tactical sensors of various sizes and capabilities that can provide 24 hour, all-weather surveillance of their AOR.
  » Logistics: Continue to leverage joint programs so that 50% of all USMC logistics vehicles will have optionally-manned capability that will allow commanders to tailor convoy operations depending on the tactical situation or mission.
UGV Emerging Requirements

- **Autonomous Mobility Appliqué System (AMAS)**
  - Add-on appliqué system to virtually any manned vehicle (Joint)
  - Requirement Document in staffing
  - Joint Capability Technology Demonstration approved

- **Squad Multi-Purpose Equipment Transport (SMET)**
  - Semi-autonomous utility/cargo platform (Joint)
  - Requirement Document in staffing

- **Engineer Squad Robot (ESR)**
  - Man-portable, lightweight robot (USMC)
  - Requirement Document Approved

- **Throwable/Ultra Light Recon Robot (ULRR)**
  - Under 10 lb robot (JIEDDO, USMC, REF)
  - Requirement Document Approved/Funded

- **Tactical Robot Controller (TRC)**
  - “Common Controller” (Joint)
  - Requirement Document in staffing
Unmanned Ground Systems Roadmap
July 2011

- RSJPO Organization
- Technology Needs/Enablers
- Modernization Strategy
- Systems/Programs Portfolio
- Technology Needs
Way Ahead/Opportunities for Business

• Interoperability and Commonality goals
  - Interoperability profiles – industry participation
  - Promotes modularity
  - Promotes competition
  - Reduces logistics burden

• Partnering between Defense and Industry
  - NDIA, AUVSI, Robotic Technology Consortium

• Next Major Contract Actions
  - ESR, ULRR
RS JPO Points of Contacts

• Col David Thompson, PM RS JPO
  ➢ david.c.thompson9.mil@mail.mil
  ➢ 586-282-7264
• Jeffrey Jaczkowski, Deputy PM RS JPO
  ➢ jeffrey.j.jaczkowski.civ@mail.mil
  ➢ 586-282-8674
• LtCol Greg Corbett, APM Logistics
  ➢ john.g.corbett.mil@mail.mil
  ➢ 586-239-5197
• MSG Terry Walker, Operations NCOIC
  ➢ terry.l.walker24.mil@mail.mil
  ➢ 586-239-2197

Web site: www.rsjpo.army.mil

Common email: rs.jpo@us.army.mil
Any Questions?