



Joint Ground Robotics Enterprise (JGRE)



NDIA Quarterly Robotics Division Meeting

17 June 2010

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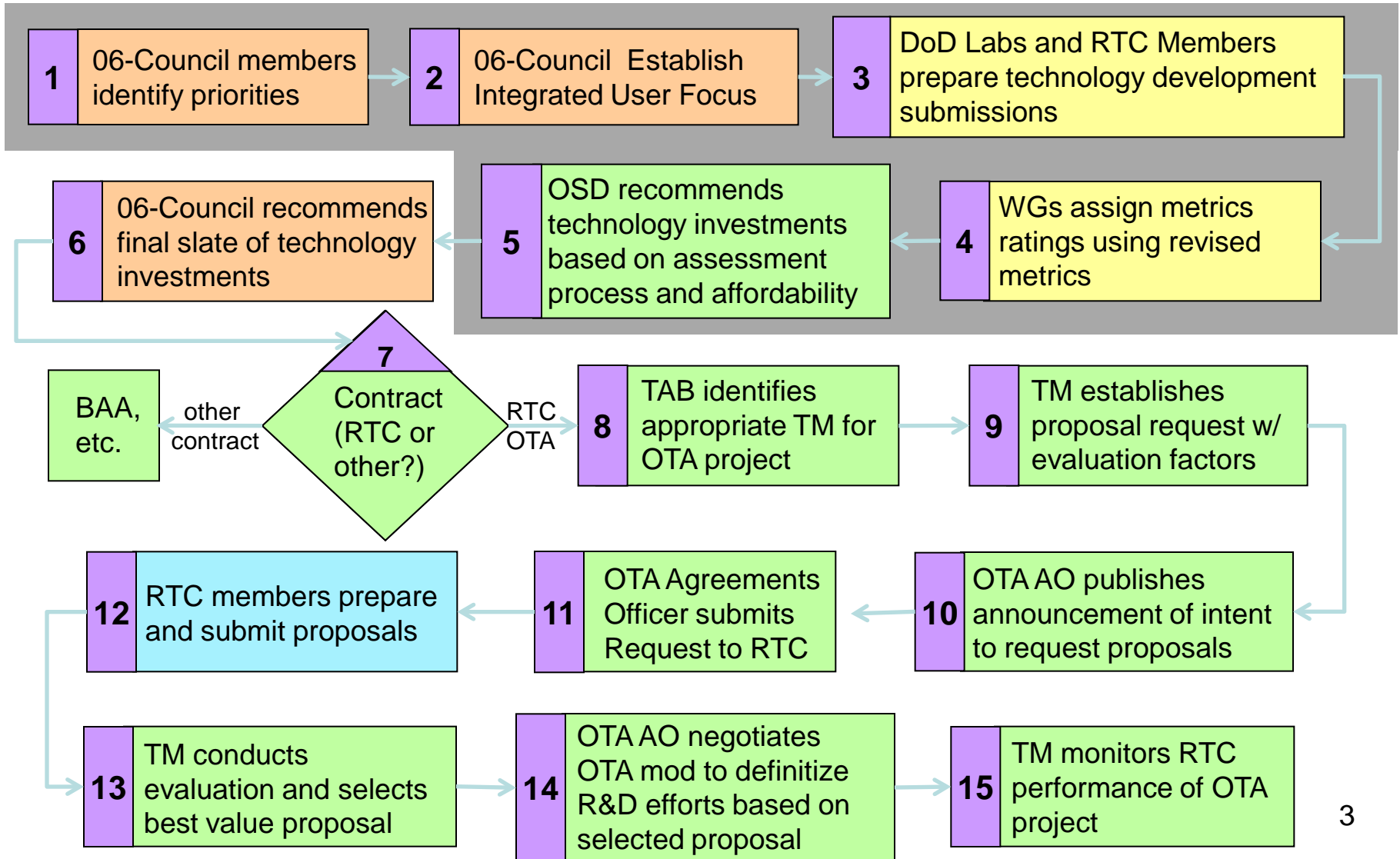
Agenda



- Technology Advisory Board (TAB) Process
- Robotics Technology Consortium
- Robotics Range Clearance Competition
- JGRE New Initiatives



TAB Process- Currently through Step 5





User Focus List, determined by O-6 Council on Feb 4th, 2010



Detect/Locate Explosives
Remove/Dispose of Explosives
Terrain Reconnaissance
Transport Warfighter Equipment (Warfighter's Pack)

Tier 1

Perimeter Security - Outside the Wire
Logistics - Vehicle Convoy Assistance
Vehicle/Personnel Inspection
Battlefield Personnel Recovery

Tier 2

Handheld/Throwable Reconnaissance
Firefighting
Logistics - Construction & Repair
Logistics - Cargo Handling

Tier 3



Technology Data Calls were sent out on February 11th, 2010



Technology Data Call

Technology Title

JGRE Cost/Fiscal Year

FY11 \$

FY12 \$

FY13 \$

Other Org Funding?

Amount \$

Organization Name

Technology Description

Current State of Technology

Future Developmental Plans

Unmanned Robotic Capabilities
(Check all boxes that apply to technology)

- Detect/Locate Explosives
- Remove/Dispose of Explosives
- Terrain Reconnaissance
- Transport Warfighter Equipment (Warfighter's Pack)
- Perimeter Security - Outside the Wire
- Logistics - Vehicle Convoy Assistance
- Vehicle/Personnel Inspection
- Battlefield Personnel Recovery
- Handheld/Throwable Reconnaissance
- Firefighting
- Logistics - Construction & Repair
- Logistics - Cargo Handling
- *Other*

Estimated Maturity of Technology
(Mark one that best describes tech maturity)

- Initiation of active research and development: ranges from paper studies of a technology's basic properties and the formulation of potential applications to analytical and laboratory studies to physically validate the analytical predictions.
- Technology integration: ranges from component/breadboard validation in a laboratory or realistic simulated environment to a model/system model or prototype in a high fidelity laboratory or simulated operational environment.
- Program/production ready: ranging from a demonstration of a prototype in an operational environment to the actual application of the technology in its final form and under mission conditions.



Technologies were consolidated into a database and reviewed/scored by TAB Members



TAB Database Final v11 : Database (Access 2007) - Microsoft Access

Home

Menu Save

Data Call Form

Estimated Maturity of Technology
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Initiation of active research and development: ranges from paper studies of a technology's basic properties and the formulation of potential applications to analytical and laboratory studies to physically validate the analytical predictions.

Technology integration: ranges from component/breadboard validation in a laboratory or realistic simulated environment to a model/system model or prototype in a high fidelity laboratory or simulated

Program/production ready: ranging from a demonstration of a prototype in an operational environment to the actual application of the technology in its final form and under mission conditions.

Unmanned Robotic Capabilities
(Check all boxes that apply to your technology)

Detect/Locate Explosives

Remove/Dispose of Explosives

Terrain Reconnaissance

Transport Warfighter Equipment (Warfighter's Pack)

Perimeter Security - Outside the Wire

Logistics - Vehicle Convoy Assistance

Vehicle/Personel Recovery

Battlefield Personnel Recovery

Handheld/Throwable Reconnaissance

Firefighting

Logistics - Construction and Repair

Logistics - Cargo Handling

Other -

TAB Process

Capabilities

Click to match capabilities marked above

Click to clear all capabilities

Detect/Locate Explosives

Remove/Dispose of Explosives

Terrain Reconnaissance

Transport Warfighter Equipment (Warfighter's Pack)

Perimeter Security

Logistics - Vehicle Convoy Assistance

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Logistics- Construction and Repair

Logistics- Cargo Handling

Technology Title

Technology 3

Cost Estimate of Maturity

Unrealistic/Unreasonable Cost

Realistic/Reasonable Cost

If proposed funding is unrealistic, provide new estimated value

Estimated TRI

4

Risk

5	Yellow	Yellow	Yellow	Yellow	Red
4	Yellow	Yellow	Yellow	Yellow	Red
3	Green	Green	Green	Yellow	Yellow
2	Green	Green	Green	Yellow	Yellow
1	Green	Green	Green	Yellow	Yellow
	1	2	3	4	5

Consequence

Game Changer?

Save Menu

Record: 14 of 7 No Filter Search

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Results of TAB Process



- 129 technologies were submitted by Government labs and RTC members
- 8 technologies were removed immediately because they were outside the scope of the JGRE (aerial platforms, etc.)
- The TAB reviewed and scored the remaining 121 technologies:
 - Four Working Groups (WGs) consisting of four people each scored the technologies
 - Final scoring was determined at a TAB face-to-face meeting on May 19th with 15 WG members
 - An additional 45 technologies were determined to be outside the scope of the JGRE (TRL 3-6), duplicative, or decided at the TAB meeting to not be funded
- There are 76 remaining technologies
 - 36 technologies scored **GREEN**
 - 34 technologies scored **YELLOW**
 - 6 technologies scored **RED**

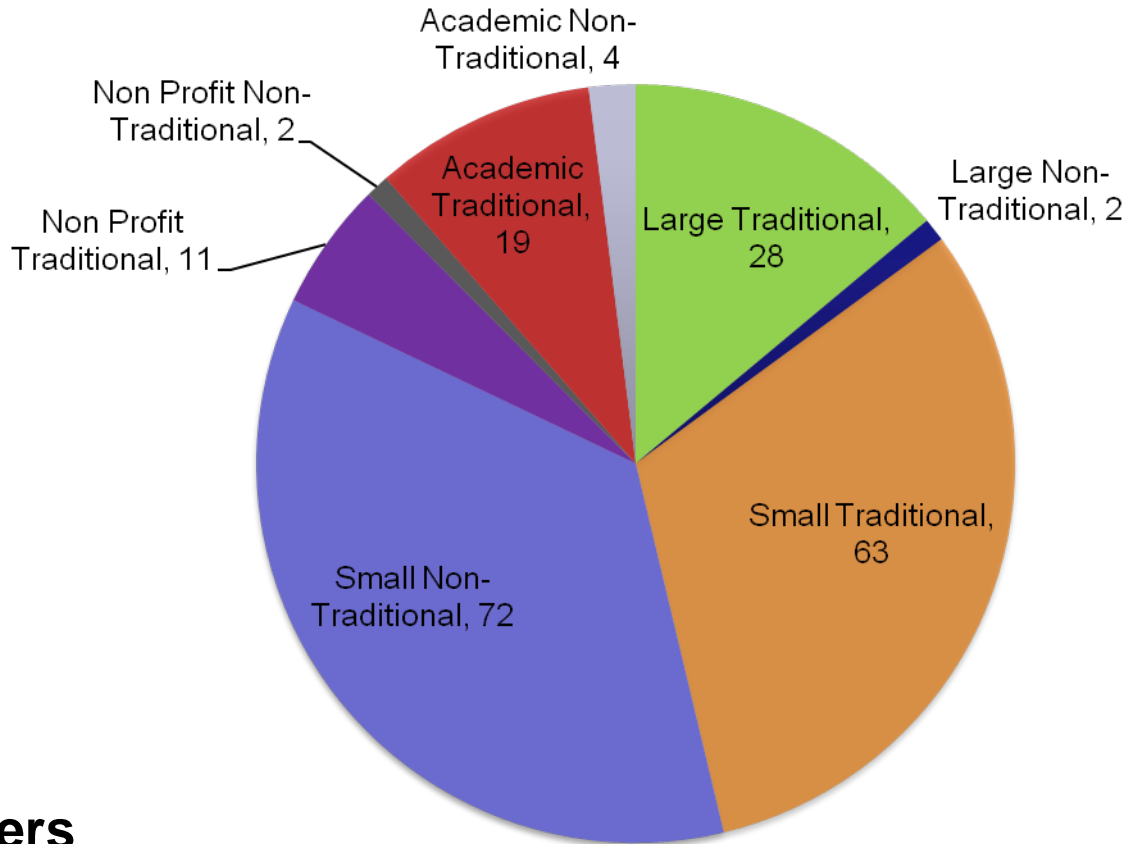
Joint Ground Robotics Consortium

17 May - 201 Members





RTC Membership



201 Members
~40% are Non-Traditional



Robotic Range Clearance Competition (R2C2)



- Goal
 - Advance the state of the art in robotics thru range clearance technologies
 - \$2 Million in cash prizes
 - G3/5/7 releasing an IDIQ
- Why Range Clearance?
 - Currently there are millions of acres encumbered with spent training rounds and munitions debris
 - The competition will help provide a safer, more timely, and more cost effective way to return the land to productive use



R2C2 Events



- Kick-off Meeting was held 22 October
- Industry Day was held 10 December
- Letter of Intent and Competition Rules
 - Posted 26 February via www.roboticrangeclearance.com
 - 11 LOIs received
 - Currently 9 competitors registered



R2C2 Future Events



- Pilot run beginning of August 2010
- Open competitor test runs at Camp Guernsey
 - 1 August 2010-1 November 2010
 - 1 May 2011-1 July 2011
- In Progress Reviews (IPRs) at competitor sites
Nov-Dec 2010
- Final Competition scheduled Summer 2011
 - Camp Guernsey in Guernsey, WY



Why Compete?



- OSD is offering prize money for the system that is most advanced and scores the highest
- Army Corps of Engineers in conjunction with the Army G3/5/7 will be releasing an IDIQ contract
 - Procure Services for Robotic Range Clearance
 - Participation in the competition will give competitors an opportunity to show the government success of their systems
 - Data collected for the competition can be used as test data to demonstrate capabilities for the IDIQ



Prize Scope



- **Unmanned** vegetation clearance (\$250K)
- **Unmanned** geophysical mapping (\$250K)
- **Unmanned** surface debris clearance (\$250K)
- **Unmanned** sub-surface UXO clearance (\$250K)

- **End Goal: Range Area Cleared of UXO (\$1M) using Unmanned Technologies**

Focus is on increasing safety and operational effectiveness via robotics automation as well as reduce time and cost



R2C2 Summary



- DoD is looking for the Robotics Range Clearance Competition to:
 - Advance the state of the art in robotics range clearance technologies
 - Foster opportunity for COTS procurement for Robotic Range Clearance
 - Provide the best balance of efficiency and innovation in robotic technology development



JGRE New Initiatives



- Strategic Planning, enhance JGRE focus and vision
- Coordinate ground robotics efforts with COCOMs
- Work to reduce duplicative efforts
- Coordinate UGV efforts with DDRE/DARPA
- Investigate international robotic efforts for inclusion in the JGRE portfolio
- Synchronize efforts with Maneuver Center of Excellence
- Develop/conduct JGRE Roadshow
- Address the issue of Route Clearance
- Create/disseminate FYI-JGRE 'newsletter'
- Collect, consolidate and disseminate UGV successes/transitions