



2010 GROUND ROBOTICS CAPABILITIES CONFERENCE & EXHIBITION

Dual Role of Robotic Technologies-
Public and Private Sector

MARCH 16-18 2010
WWW.NDIA.ORG/MEETINGS/0380

DORAL ► MIAMI, FL

EVENT #0380

Conference Notes:

***Please help NDIA make the Ground Robotics Capabilities Conference & Exhibition better!**

A survey will be sent to the email address you provided at the time you registered for the conference the week of March 22, 2010.

***A link to the conference proceedings will also be sent to you via email the week of March 22, 2010.**

TUESDAY, MARCH 16, 2010

4:00 pm-6:30 pm **REGISTRATION OPENS**

5:00 pm-6:30 pm **NETWORKING RECEPTION** Sponsored by: 

WEDNESDAY, MARCH 17, 2010

7:00 am-8:00 am **REGISTRATION AND CONTINENTAL BREAKFAST - IN EXHIBIT HALL**

8:00 am

WELCOME

- ▶ MG Barry Bates, USA (Ret), VP, Operations NDIA
- ▶ Jose Gonzalez, OUSD (Acquisition, Technology & Logistics), Deputy Director, Land Warfare & Munitions

8:05 am

ADMINISTRATIVE COMMENTS

- ▶ VADM Joe Dyer, USN, (Ret) & Robotics Division Chair

8:10 am-9:00 am

KEYNOTE

- ▶ **Hon. Charles Bolden, NASA Administrator**

9:00 am-10:00 am

DUAL USE COMBAT DEVELOPERS PANEL

- ▶ Mr. Terry Briggs, Assistant to the Executive Manager, EOD Technology and Training
- ▶ Mr. Don Sando, Capabilities Development and Integration for the Maneuver Center, US Army Training & Doctrine Command
- ▶ BGen Lee Miller, Director, Capabilities Development Directorate, Marine Corps Combat Development Command
- ▶ BGen Dave Howe, Director, Installations & Missions Support, Air Combat Command
- ▶ BGen Glenn Walters, Deputy Director for Resources & Acquisition, J-8

10:00 am-10:30 am

BREAK IN EXHIBIT HALL

10:30 am-11:00 am

WARFIGHTER PRESENTATION

- ▶ MG Keith Walker, Director, Future Force Directorate, US Army Training & Doctrine Command

11:00 am-12:00 pm

WARFIGHTER PANEL

- Chair: LTC Jay Ferreira, Product Manager, Unmanned Ground Vehicles, PEO Integration
- ▶ USAF CMSgt Michael Hatfield, ACC EOD Chief Enlisted Manager
 - ▶ CSM Thomas Gonzalez, 71st EOD Group (RAPTORS)

12:00 pm-12:45 pm

JOINT GROUND ROBOTICS ENTERPRISE REVIEW

- ▶ Dr. Jim Overholt, Director, Joint Ground Robotics Enterprise

12:45 pm-2:00 pm

LUNCH & AWARDS PRESENTATIONS Sponsored by:



ROBOT ROUND UP ON THE GREEN! - LOCATED IN EXHIBIT HALL

ROBOT ROUND UP ON THE GREEN! -CONT.

- 2:00 pm-3:00 pm **COMPETITIONS - BATTLE-PROVEN ROBOTS**
- 3:15 pm-4:00 pm **DEMONSTRATIONS - ADVANCED TECHNOLOGY ROBOTS**
- 4:15 pm-5:00 pm **COMPETITION AWARDS**
- 5:00 pm-6:30 pm **RECEPTION IN EXHIBIT HALL** Sponsored by: **iRobot®**

THURSDAY, MARCH 18, 2010

- 8:00 am **OPENING REMARKS**
 - ▶VADM Joe Dyer, USN, (Ret) & Robotics Division Chair
- 8:05 am-8:35 am **GUEST SPEAKER**
 - ▶TBD
- 8:35 am-9:35 am **DUAL USE SCIENCE & TECHNOLOGY PANEL**
 - ▶Mr. Bob Quinn, Vice President, TALON Operations QinetiQ North America, Technology Solutions Group
 - ▶Dr. Grace Bochenek, Director, Tank Automotive Research, Development, & Engineering Center
 - ▶Mr. John Miller, Director, Army Research Laboratory
 - ▶Mr. George Solhan, Deputy Chief of Naval Research for Expeditionary Maneuver Warfare & Combating Terrorism; and Director, Marine Corps Science & Technology
- 9:35 am-10:05 am **BREAK IN EXHIBIT HALL**
- 10:05 am-11:05 am **DUAL PURPOSE INDUSTRY PANEL**
 - ▶Dr. Hugh Herr, PhD, MIT Media Lab
 - ▶Mr. Colin Angle, Co- Founder, Chairman & CEO, iRobot Corp.
 - ▶Dr. Barbara Lindauer, Business Development, General Dynamics Robotic Systems
 - ▶Ken Stratton, Sr. Technical Steward, Caterpillar Corp.
- 11:05 am-11:35 am **KEYNOTE**
 - ▶**Mr. John Beck, Chief Engineer, Advanced Product Engineering Oshkosh Corporation**
- 11:35 am-12:35 pm **DUAL USE MATERIAL DEVELOPERS PANEL**
 - ▶Mr. Victor Gavin, Executive Director, Program Executive Office, Littoral & Mine Warfare
 - ▶BGen Michael Brogan, Commander, Marine Corps Systems Command
 - ▶Mr. Michael Asada, Deputy Program Executive Officer, Ground Combat Systems
- 12:35 pm-1:00 pm **WRAP-UP**
 - ▶Dr. Jim Overholt, Director, Joint Ground Robotics Enterprise
- 1:00 pm **BOX LUNCH-PICK UP IN EXHIBIT HALL** Sponsored by:
NORTHROP GRUMMAN *Remotec*
- 1:30 pm **CONFERENCE ADJOURNED**

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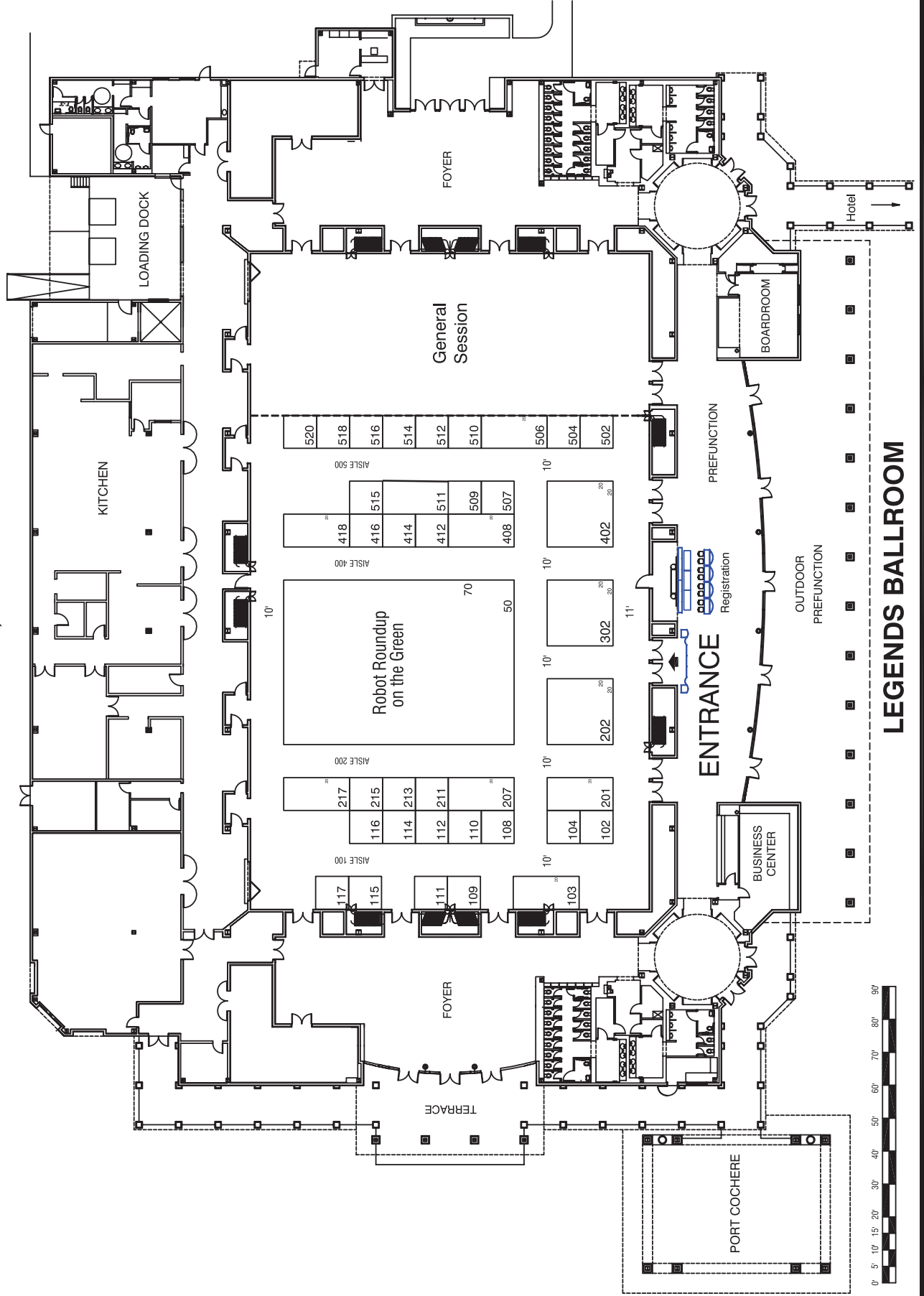
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Robotics Division:

Established in June 2006, the Robotics Division has been organized to focus on the national security-related applications of robotics technology. Focus areas for the Division will include the research, development, acquisition, application, integration and sustainment of unmanned ground vehicles to enhance the capabilities and survivability of warfighters.

If you are not yet a member of the division, but want to participate in division activities in the future, please contact the NDIA Division Director, Michael Dauth, at either mdauth@ndia.org or 703-247-2593.

2010 Ground Robotics Capabilities Conference & Exhibition
 March 16-18, 2010
 Doral Golf Resort & Spa
 Miami, Florida



LEGENDS BALLROOM

EXHIBITOR INFORMATION:

COMPANY NAME	BOOTH #
AEgis Technologies	510
Air Force Research Lab	211
AMREL/AMERICAN RELIANCE, INC.	102
API Technologies Corp.	504
Autonomus Solution	112
Black i Robotics	506
Broadcast Microwave Services	509
Cobham Surveillance, DTC Products	201
Contineo Robotics	103
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The Boeing Company	418
TORC Technologies	104
US Army ARDEC Picatinny	514
US Army TARDEC	516
Vecna Technologies	412

EXHIBITOR PROFILE:

AEgis Technologies- Booth # 510: AEgis Technologies' (www.aegistg.com) capabilities include Modeling & Simulation development, training, test support, engineering analysis and hardware design. Products include the Andros XPT Trainer, a high fidelity training system utilizing state of the art virtual reality simulation with game quality graphics. This fully integrated trainer offers scenario based training based upon a full physics engine. Realistic simulated environments offer train like you use – use as you trained capability.

Air Force Research Laboratory - Booth # 211: The Robotics Research Group of the Air Force Research Laboratory concentrates its research on developing systems that augment and support the warfighter for dull, dirty, dangerous, and impossible mission tasks. Research efforts are focused on the application of robotic technologies in response to existing and emerging USAF and DoD needs.

AMREL/AMERICAN RELIANCE, INC. - Booth # 102: AMREL uses their well-known ROCKY rugged, mobile, computing platforms to design and manufacture customized, interoperable solutions. One small-footprint, highly integrated, modular OCU can be quickly and easily modified in the field to command and control a wide array of Unmanned Systems. Don't wait to 2012 for common control. Visit www.commoncontrol.com.

API Technologies Corp. - Booth # 504: API Technologies Corp. is a prime contractor in sophisticated electronics, highly engineered systems, secure communications and electronic components and subsystems to the global defense and aerospace industries. The company's innovative design, engineering and manufacturing solutions span electronic systems, control systems, electromagnetics, UAVs,UGV robotics, and Unmanned system payloads

Autonomous Solutions - Booth # 112: Autonomous Solutions has long been a leader in vehicle automation, payload development for EOD robots, and JAUS C2 software. While its main business continues to be vehicle automation for mining, agricultural, and military applications, the company also has programs in autonomous manipulation, long-range perception, and 3D world-building.

Black i Robotics- Booth # 506

Broadcast Microwave Services - Booth # 509: BMS provides digital microwave Video Data links meeting the latest requirements of today's Unmanned Systems. Supplying HD, SD Video, and/or a high Data Rate, BMS's full line of Transmitters, Receivers, and Antennas afford system solutions with superior Link Range and optimized Occupied RF Bandwidth. The equipment, designed for small UAVs and UGVs, incorporates minimum size, weight and power performance.

Cobham Surveillance, DTC Products- Booth # 201: Cobham Surveillance, DTC Products is a leading designer and manufacturer of communication products for law enforcement and military customers around the world. Our mission is to provide our customers with the best set of communication solutions relating to audio and video in tactical environments.

Contineo Robotics - Booth # 103: Contineo Robotics was formed by leaders from the DARPA Revolutionizing Prosthetics Program and the Johns Hopkins Applied Physics Laboratory to provide dexterous manipulation capability to a variety of robotic applications. Contineo is currently developing a continuum of improved terminal devices that incorporate conformal grasping and variable compliance to enhance functionality and improve user safety.

Elbit Systems of America- Booth # 115

EXHIBITOR PROFILE CONT.:

HDT Engineered Technologies - Booth # 202: HDT Engineered Technologies (HDT) designs, develops and manufactures fully integrated, deployable engineered and expeditionary solutions. HDT engineers pioneered the development of a revolutionary new robotic arm that has applications in the medical, military and homeland security fields. Unique design features of this technology provide highly dexterous manipulation with a robust high degree of freedom system and the highest payload to mass ratio available.

Ibeo - Booth # 512: Ibeo Automobile Sensor- Based in Hamburg, Ibeo Automobile Sensor has been developing laser sensors for the automotive sector since 1998. Unique development work has enabled Ibeo to establish technological leadership based on patent protection. Ibeo is majority-owned by Sick AG, the world's leading manufacturer of sensor solutions for industrial applications. Ibeo today employs 45 people and holds more than 85 patents for laser scanner based object and road recognition. The current Ibeo LUX Laserscanner delivers top-quality data of surrounding objects and the environment. It enables fast and simultaneous realization of all front-end-applications to ensure practically full control and thus protection of everyone involved in traffic situations. The Ibeo LUX is characterized, in particular, by its robustness in all weather conditions. Apart from unmatched laser technology, Ibeo sensors are also distinguished by their compact size. They can be integrated entirely invisibly in any vehicle body. Thanks to their small size, their high accuracy and their low power consumption Ibeo Laserscanners are also perfect for use in the field of robotics. In 2007, Ibeo participated with their Team-LUX in the Darpa Urban Challenge, the world's most remarkable car rallye for autonomous driving. All 3 winning teams used Ibeo Laserscanners. The Ibeo products are distributed through Bobby Hambrick (Automation Team Leader) of Springfield Electric. You can reach Bobby at rhambrick@sprelec.com. More information please visit the following: www.team-lux.com, www.ibeo-as.com or <http://www.springfieldelectric.com/autonomous.aspx>

Insight Technology Incorporated- Booth # 109

iRobot Corporation - Booth # 302: iRobot's combat-proven unmanned ground vehicles (UGVs) protect those in harm's way and save lives every day. More than 3,000 iRobot® PackBot® robots have been delivered worldwide, successfully performing search, reconnaissance, bomb disposal and other dangerous missions. iRobot's tactical mobile robots, which also include the Small Unmanned Ground Vehicle (SUGV®), iRobot Warrior™ and iRobot Negotiator™, easily climb stairs, navigate rubble and penetrate inaccessible areas.

Kairos Autonomi - Booth # 518: Kairos Autonomi® offers cost-effective, superior unmanned technology with the patent-pending Pronto4™ Agnostic Autonomy System — a vehicle-agnostic autonomy kit field-installable on existing ground vehicles in about 4 hours. Capable of tele-operation, semi-autonomous or fully autonomous operations, the Pronto4 system is the preferred UGV solution for T&E, training, range clearance, and tactical operations.

L-3 Communication Systems West - Booth # 416: Communication Systems-West is committed to providing cutting-edge communication systems for the 21st century for high-performance intelligence collection, imagery processing and satellite communications for Department of Defense and other government agencies. The company supplies secure, real-time communications

Lockheed Martin Corp.- Booth 511 & 515: Lockheed Martin Missiles and Fire Control is an internationally recognized designer, developer and manufacturer of precision engagement aerospace and defense systems for the U.S. and allied militaries. With more than 10,000 employees around the globe, LMMFC is one of the leading business units of Lockheed Martin Corporation.

EXHIBITOR PROFILE CONT.:

MEDC - Defense Contract Coordination Center- Booth #215: The Defense Contract Coordination Center (DC3) strategically connects defense industry buyers with capable Michigan businesses. Leading the DC3 is U.S. Marine Corps Colonel James Braden (Ret.). Under Col Braden, the DC3 is leveraging Michigan's manufacturing and engineering expertise in high-tech sectors, such as robotics and homeland security.

National Robotics Engineering Center - Booth # 114: The National Robotics Engineering Center (NREC) is an operating unit of Carnegie Mellon University. NREC has developed numerous unmanned ground vehicles, ranging from 12-pound throw-bots to 9-ton combat vehicles. It's an industry leader in perception, operator assistance, and autonomy technologies for reconnaissance, navigation, and more. NREC is your one-stop shop for advanced ground robotics systems.

Robot Corporation - Booth # 302: iRobot's combat-proven unmanned ground vehicles (UGVs) protect those in harm's way and save lives every day. More than 3,000 iRobot® PackBot® robots have been delivered worldwide, successfully performing search, reconnaissance, bomb disposal and other dangerous missions. iRobot's tactical mobile robots, which also include the Small Unmanned Ground Vehicle (SUGV®), iRobot Warrior™ and iRobot Negotiator™, easily climb stairs, navigate rubble and penetrate inaccessible areas.

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Navy EOD Technology Division - Booth # 207

Northrop Grumman, Remotec - Booth # 502: Remotec, a Northrop Grumman subsidiary, serves military, EOD, Hazmat, and First Responder communities worldwide as a leading provider of mobile robotic systems in a variety of undesirable, hazardous, and potentially life threatening situations and environments . Put our 30 years of experience at 'Keeping Danger at a Distance' to work for you.

EXHIBITOR PROFILE CONT.:

Nucomm/RF Central- Booth # 110

Oshkosh Defense - Booth # 408: Oshkosh Defense, a division of Oshkosh Corporation, leads the way in military trucks and armored wheeled vehicles. Since 1917, Oshkosh has continuously developed new products and technologies that make military jobs easier, safer and more efficient. Oshkosh Defense's comprehensive product lines are recognized for superior performance and reliability, particularly in off-road environments. For more information, please visit www.oshkohdefense.com. About Oshkosh Defense Oshkosh Defense, a division of Oshkosh Corporation, is an industry-leading global designer and manufacturer of tactical military trucks and armored wheeled vehicles, delivering a full product line of conventional and hybrid vehicles, advanced armor options, proprietary suspensions and vehicles with payloads that can exceed 70 tons. Oshkosh Defense provides a global service and supply network including full life-cycle support and remanufacturing, and its vehicles are recognized the world over for superior performance, reliability and protection. For more information, visit www.oshkoshdefense.com. The SandCat™ multi-functional vehicle from Oshkosh Defense enables special forces to respond to highrisk emergency situations with extreme confidence. This high-speed, well-protected, ultra-maneuverable vehicle can be specifically designed for a variety of tactical functions – from riot and crowd control to forced entry and insertion of tactical response units.

QinetiQ North America - Booth # 402: QinetiQ North America delivers world-class technology and responsive solutions to government agencies and commercial customers for many of their most urgent and complex challenges. More than 6,400 engineers, scientists and other professionals have the mission knowledge required to meet the demands of national defense, homeland security and information assurance customers.

RE2, Inc. - Booth # 108: RE2 is a leading developer of Intelligent Modular Manipulation Systems. RE2's systems are scalable and modular, providing enhanced capabilities for all classes of UGVs. RE2 is focused on creating plug-n-play manipulators that are interoperable with current and next-generation platforms. RE2's mission is to advance the state of the art of mobile manipulation, specifically enabling manipulators to be more dexterous, precise, intuitive for teleoperation, and intelligent for autonomous behaviors.

ReconRobotics Inc - Booth # 507: ReconRobotics, Inc is the manufacturer and the distributor of the world's only mobile and throwable miniature reconnaissance robots. These robots – the Recon Scout IR, Recon Scout XT and Recon Scout Rescue – are used by police tactical teams, the U.S. military and federal security agencies to gather real-time reconnaissance data that can help them save lives and reduce property damages during hostile situations. Learn more at www.reconrobotics.com

Robotic Research, LLC - Booth # 414

Robotics Technology Consortium - RTC - Booth # 217: The RTC is a non-profit that supports the efforts of the DoD and other Government organizations in regards to ground robotics tech. It was formed in '08 at the request of the JGRE, within the Office of the Secretary of Defense, and consists of large and small for-profit companies, academic institutions, and non-profit organizations. A specific purpose of the RTC is to engage companies and organizations that have not performed much if any work for the DoD and other Government organizations.

Scientific Services Program - Booth # 111: The Scientific Services Program (SSP) is an accelerated contract mechanism that enables federal government organizations to obtain scientific/technical services in order to accomplish their organizational goals. Through the SSP, non-government scientists, engineers, and subject matter experts can be quickly subcontracted to perform short term, well defined efforts when the expertise required is not available at the requesting government organization. Self-employed consultants, faculty, colleges & universities, small and large businesses may perform SSP tasks. SSP tasks can be performed in any science and technology area of interest to all federal government agencies. Work must be of a scientific and technical nature for the solution of problems related to research and development that can be described as a study, analysis, evaluation, assessment or interpretation.

EXHIBITOR PROFILE CONT.:

Segway Robotics- Booth # 219: The Segway Robotic Mobility Platform (RMP) takes the performance and engineering of the Segway Personal Transporter (PT) and makes it available in a customizable package for robotics applications. The RMP product line uses the same components that enabled a PT rider to travel more than 4,000 miles across the United States. These components were designed and tested to be highly reliable and durable, making the RMP ideal for moving heavy payloads in tight spaces over a variety of terrain.

Stratom, Inc. - Booth # 213

The Boeing Company - Booth # 418: Boeing is the world's leading aerospace company and largest and most versatile manufacturer of commercial and military aircraft. Boeing designs and manufactures aircraft, electronic and defense systems, missiles, satellites and advanced communication systems. Boeing also is a major service provider to NASA for the space shuttle and International Space Station.

TORC Technologies - Booth # 104: TORC is a leading robotics engineering and product development company focusing on unmanned and autonomous vehicle systems. TORC commercializes intelligent robotic technologies into modular, interoperable, off-the-shelf products that enable customers to rapidly integrate and deploy unmanned solutions. In 2009, TORC participated in the MCWL LOE 3.3, successfully demonstrating its autonomous technology as part of a small unit resupply mission using unmanned ground vehicles.

US Army ARDEC Picatinny - Booth # 514: ARDEC is an internationally acknowledged hub for the advancement of armaments technology and engineering innovation. As one of the specialized research, development and engineering centers within the U.S. Army Materiel Command, ARDEC has the responsibility for meeting this critical demand. Our mission is to develop and maintain a world-class workforce to execute and manage integrated life cycle engineering processes required for the research, development, production, field support and demilitarization of munitions, weapons, fire control and associated items. This is in direct support of RDECOM's mission to get the right technology to the right place, at the right time for the Warfighter. Our collective goal is to create the most competitive Enterprise for providing our nation with cutting-edge armament technology solutions that save soldier lives. ARDEC strives to support the Army's efforts to ensure soldier survivability, as well as enhance platform and area protection by providing engineering, design and development support for rapid fielding of critical technologies. ARDEC's workforce provides lifecycle support for nearly 90 percent of the Army's lethality used every day by the U.S. Warfighter.

US Army TARDEC - Booth # 516: Headquartered at the Detroit Arsenal in Warren, MI, TARDEC is the Nation's laboratory for advanced military automotive technology and serves as the Ground Systems Integrator for all DOD manned and unmanned ground vehicle systems. TARDEC is a full life-cycle, systems engineering support provider-of first-choice for all DOD ground combat and combat support weapons, equipment and vehicle systems. TARDEC develops and integrates the right technology solutions to improve Current Force effectiveness and provides superior capabilities for Future Force integration. TARDEC's technical, scientific and engineering staff lead cutting-edge research and development in Ground Systems Survivability; Power and Mobility; Intelligent Ground Systems; Force Projection; and Vehicle Electronics and Architecture. TARDEC is a major research, development and engineering center for the U.S. Army Research, Development and Engineering Command (RDECOM) and partner in the TACOM LCMC.

Vecna Technologies - Booth # 412: Vecna Robotics provides the world's most intelligent, powerful, precise, and energy-efficient robotic manipulation solutions to support demanding military applications which include logistics, hazardous duty, and rescue operations.



iRobot: The Robot Company:

iRobot designs and builds robots that make a difference – on the land and in the water. Founded in 1990, iRobot has two decades of experience at the forefront of the global robot industry. iRobot's government and industrial robots provide enhanced situational awareness, reduce risk and increase mission success.

iRobot's combat-proven unmanned ground vehicles (UGVs) protect those in harm's way and save lives every day. As a key partner in the U.S. Army's Brigade Combat Team Modernization program, iRobot is developing the next-generation SUGV (Small Unmanned Ground Vehicle), a versatile robot for infantry soldiers. SUGV is a smaller, lighter version of the iRobot® 510 PackBot®, one of the most successful battle-tested robots in the world. More than 3,000 PackBot robots have been delivered to military and civil defense forces worldwide, successfully performing search, reconnaissance, bomb disposal and other dangerous missions. iRobot's military robots also include the iRobot 210 Negotiator®, an affordable surveillance robot for public safety professionals, and the iRobot 710 Warrior®, a large and rugged robot designed to carry 150-pound payloads.

iRobot's unmanned underwater vehicles (UUVs) perform multiple missions for maritime researchers, oceanographers and military planners, including physical, chemical and biological oceanography, tactical oceanographic surveys and marine environmental monitoring. iRobot's family of maritime systems includes the iRobot 1Ka Seaglider™, a long-range, high endurance UUV that makes oceanographic measurements, and the iRobot Ranger, a general development platform for small UUV capabilities.

iRobot's goal is to drive innovation, serve as an industry catalyst and change the world by fueling the era of robots. Along those lines, iRobot's Research Group performs cutting-edge research to meet the advanced needs of sponsors with integrated robotic solutions. The Research Group pursues R&D opportunities with leading academic research institutions, businesses and other technology innovators, leveraging experience as a systems integrator and putting together best-in-class teams of partners from a wide range of technology areas

As a leader in the global robot industry, iRobot remains committed to providing platforms for invention and discovery, developing key partnerships to foster technological exploration and building robots that improve the quality of life and safety standards worldwide.



QinetiQ North American/TALON Robots:

QinetiQ North America (QNA) delivers world-class technology and responsive solutions to government agencies and commercial customers for many of their most urgent and complex challenges. More than 6,400 engineers, scientists and other professionals have the mission knowledge required to meet the demands of national defense, homeland security and information assurance customers. Among QNA's best known products are its TALON®, Dragon Runner™ and MAARS® robots which are described below along with the kit developed to roboticize Bobcat® loaders.

Dragon Runner Field-Transformable SUGV – Base unit weighs less than 20 pounds; can be carried in a standard-issue pack. Missions include reconnaissance inside buildings, sewers, drainpipes, caves and courtyards; perimeter security using on-board motion and sound detectors; checkpoint security; in-vehicle and under-vehicle inspections. Two hundred currently working in Afghanistan.

TALON – More than 3,000 have now been fielded. Most widely used robot for disarming IEDs. Can be configured for specific tasks such as IED defeat, CBRNE/hazmat identification, reconnaissance, combat engineering support and SWAT/MP unit assistance. Now comes with longer, stronger arm and rotating shoulder.

C-TALON Bottom-Crawling Robot – Provides access to denied harbor, surf-zone and riverine environments. Deploys offshore, then conducts stealthy ingress to collect data. Offers high ocean current resistance and an extended sleep mode.

MAARS -- Applies non-lethal force by projecting the operator's voice through mounted loudspeakers or pulsing a green, eye-safe laser to dazzle people; also capable of launching less-lethal ammunition and lethal ammunition. Can also be configured with a manipulator arm.

Bobcat Robotic Controller Kit -- Can be installed in about 15 minutes on 17 different models of Selectable Joystick Controlled (SJC) Bobcat loaders (skid-steer, all-wheel steer, or compact track). Works on 16,000+ SJC Bobcat loaders produced since 2001 and sold world wide. Temporarily transforms the Bobcat into a "robot" capable of using more than 37 Bobcat-approved attachments.

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