Fostering Dialogue for Robotics in Defense

Drones autonomously launched and recovered from a moving vehicle. Underwater autonomous platforms and sensors. Moving target robots for live fire training. Mixed Reality for improving accuracy of aircraft engine maintenance. Drones that look like a donut and can fly in tight spaces. These are just a few of the innovations in robotics, autonomy, and artificial intelligence that were demonstrated to representatives across the Department of Defense during the 2nd Annual Robotics in Defense event hosted by MassRobotics and sponsored by MITRE.

MassRobotics is an independent, non-profit organization serving as an innovation hub for robotics and connected devices. Through their programming and events, they bring together innovative startups and existing technology organizations to nurture the next generation of talent and promote economic growth and innovation. Robotics in Defense is part of their signature "Robotics In" event series where they focus the presentations, demonstrations, and participants around a particular industry like manufacturing, logistics, construction, or, in this case, defense.

The semi-virtual half-day event included presentations from Department of Defense innovation program representatives and startups located at MassRobotics. The goal of the event was two-fold: provide startups with awareness of current DoD challenges and mission needs related to robotics; and expose DoD innovation organizations to novel deployed technologies and cutting edge, new emerging robotic technologies. The event saw over 100 online attendees, with a select few participants invited to attend in person.

Marissa McCoy, Chief of Staff for MITRE's Air Force Cyber Operations Division, kicked off the event by providing an overview of the DoD Innovation Ecosystem and sharing MITRE-developed online resources for startups to navigate DoD organizations and more easily locate opportunities best suited to their technology and company goals. Tap the Innovation Ecosystem is a single platform that pulls together opportunities from the DoD Innovation Ecosystem, categorizing organizations by their primary offerings (e.g., accelerators, challenges, funding) and outlining additional relevant information to make doing business with the government more accessible. Understanding the DoD Innovation Ecosystem is an interactive visualization of DoD innovation organizations and their offerings, filtered by Technology Readiness Levels, allowing companies to identify the best opportunities based on the current state of their technology development.

The introduction was followed by quick pitches from the DoD innovation organizations on what types of solutions they seek, how they share those needs, and how to engage. The startups heard from AFWERX, Air Force Ventures, Army Combat Capabilities Development Center, Army Research Lab, Army XTechSearch, Defense Innovation Unit, FedTech, In-Q-Tel, Joint Artificial Intelligence Center, NavalX, and SOFWERX.

As a keynote, Scott Newbern, Vice President and Chief Technology Officer at AeroVironment, highlighted innovations from his company's 50-year history, from their startup beginnings to winning defense procurement programs and transitioning to a publicly traded company. He emphasized the time it takes to achieve success, recognizing the need to sometimes pivot and shift while maintaining perseverance especially when developing transformative, disruptive, tough tech solutions.

TargetArm provided a live demonstration of a device that autonomously launches and recovers both rotary and fixed wing drones from any moving vehicle. Photograph courtesy of MassRobotics.

Robotics solutions for maritime, ground, air, and indoor operations were presented by AirShare, Ascend Robotics, Autonodyne, Black-I Robotics, Cleo Robotics, Dive Technologies, Kraken, MVP Robotics, Pison, Spiral Technology, TargetArm, ThayerMahan, and URBX Market. Several companies provided live demonstrations for the invited in-person attendees.

Due to the online nature of this year's event, networking and live demonstrations were very limited, although there was an increase in attendance and participation by DoD organizations. The event fostered dialogue between DoD organizations and robotics startups, ultimately helping to ensure that doing business with the government is more accessible for the most promising robotics technologies.

[Click here to watch a recording of the event.](#)