TATRC TIMES

TATRC Chair & ASBREM Convene Autonomous Medical Evac Workshop



Graphical rendition of Autonomous Reconfigurable Embedded System (ARES) Combat Evacuation Misson Module.

n preparing to address the medical needs of future conflict, Dr. Gary Gilbert, TATRC Chair of the Joint Medical Unmanned Systems Working Group (JMUSWG), worked in concert with the Executive Secretary of the Armed Services Biomedical Research and Evaluation and Management (ASBREM) to plan, organize, convene, and execute an Autonomous Medical Evacuation (AME) State of the Science Workshop. Hosted by MITRE Inc. in Tysons Corner, VA in July, the workshop was well attended by key stakeholders including medical operational users, combat developers and researchers from all the Services, the United States Special Operations Command (USSOCOM), United States Transportation Command (USTRANSCOM) and the Department of Defense Communities of Interest (CoIs). The DoD COIs represent 17 technical areas that span cross-cutting science and technology such as platforms, energy and power, and human systems to name a few. These military medical and scientific experts came together to explore the feasibility, potential development and use of AME in future combat operations.

The workshop started with high-level briefings from the Joint Staff Surgeon, the USTRANSCOM Surgeon, and the Defense Health Agency Research and Development Director who provided strategic guidance and operational context for the future operating environment. State of the Science briefs by experts from multiple CoIs provided relevant technical overviews. Attendees and presenters participated in scenario-based work groups highlighting technological gaps and challenges associated with AME capability development.

The workshop focused participants on four scenarios to enable brainstorming with facilitators guiding the discussion. The four scenarios were (1) urban ground combat, (2) combat search and rescue (CSAR), (3) littoral combat, and (4) maritime combat. Attendees explored these cases for AME, considered the risks and benefits, proposed possible solutions and identified the related technological and policy requirements. The work groups then presented the highlights of their discussions and initial findings, including recommendations for next steps during an out brief session at the end of the workshop.

By the end of the workshop, the attendees generally agreed that developing the AME capability will involve a phased approach dependent on evolving doctrine and policy, formulation of operational CONOPS, development of technology maturity roadmaps, documentation of capability needs and attention to regulatory approval requirement. They noted that the largest barriers to full autonomous care and evacuation (ACE) capability development and implementation, is decisive cross-Component leadership, support and championship. This support is needed to develop a clear plan to address policy and system of systems integration considerations required to achieve ACE.

Dr. Gary Gilbert, who chairs the JMUSWG and serves as USAMRMC's Capabilities Area Manager for the Army Science & Technology task area of Medical Robotics and Autonomous Systems (MED-RAS) and other lead scientists, acknowledged that developing fully autonomous capabilities for casualty care and patient evacuation is complex and includes a broad spectrum of technical and non-technical challenges and considerations. Probably more than any other Army S&T task involving application of emerging technologies to future DoD operational missions, MED-RAS will require significant and continuous cross functional coordination among almost all DoD COIs.