TATRC Briefs at the Army Marine Corp C2 / SA Convergence IPT

Two members of TATRC's Medical Intelligent Systems Lab (MISL), Mr. Carl Manemeit and Mr. James Beach, briefed the Army-Marine Corps (A/MC) Command, Control and Situational Awareness (C2/SA) Convergence Systems Engineering Integrated Process Team (IPT) on Operational Virtual Health research concepts. The A/MC IPT was chartered by the 3-Star Army Marine Corps Board's General Officer Steering Committee (GOSC) as an investigating body to review all C2/SA systems cross Service coordination efforts and to report back twice a year on all convergence and divergence issues to the GOSC. The IPT has covered issues from Air and Ground topics, to platforms, handhelds, transports, networks, coalition, and data standardization, covering a wide array of topics that cut across the Army and Marine Corps and pulls in the Navy and Joint Staff as well.

TATRC's presentations informed the IPT on the future research concepts in virtual health that require tactical network connectivity to supply provider to provider teleconsultation for medics in isolated, austere environments, during prolonged field care, and en route casualty evacuation. The briefing also covered medical understanding of the future concept of a multi-domain battlefield, the challenges of timely evacuation of casualties from the battlefield, and prolonged field care where medics will have to treat casualties longer at the point of need. The near peer enemies in symmetric warfare, dispersed operations, and anti-access/area denial resulting in prolonged field care will push medical personnel to work well-beyond their license and training. These virtual health capabilities that are dependent on

reliable communications, will help address the gap between the required patient care and the medic's skill set.

The operational virtual health projects presented to the IPT are reliant upon the tactical and operational networks. With reliable networks having sufficient bandwidth, remote casualty monitoring with Artificial Intelligence assist applications in the future will provide medical support to medics during prolonged field care, en route casualty evacuation, and during Remote Autonomous Systems extractions. Continuous monitoring and transmission of medical data through the tactical and operational networks will become essential in providing near real-time medical situational awareness for informing medical direction and guidance from remote clinical specialists. The electronic documentation will be transmitted into the casualty's permanent electronic health record to inform near-term and long-term clinical decisions. The research included an overview concept of operation of micro-cloud connectivity at the Brigade level and lower to capture electronic DD 1380 tactical combat casualty care encounter that can be uploaded into Legacy electronic health records and future GENESIS electronic health records, and physiological monitoring capability that stream medical vital signs data, imagery, voice, and documentation. Through networks with sufficient bandwidth for tactical voice and video services, the capability for the medic to reach out to a surgeon via a tele-surgical consultation has the potential to provide lifesaving capability.

"The benefits of participating in this meeting was that we were able to provide other attendees with a broad overview of knowledge for future medical requirements on the tactical network architecture. Some of this hadn't been presented from the medical perspective before, so there was keen interest and active engagement during our time at this IPT," stated Mr. Carl Manemeit, Deputy Lab Manager for MISL.