

Op-T-Med Announces New Phase 3 SBIR Award for UAS Research

On 27 March, Dragonfly Pictures Inc. (DPI) was awarded a Phase 3 SBIR contract to collaborate with TATRC's Operational Medicine Lab on a research project entitled "Emergency Medical Resupply & Enroute Care Unmanned Aerial System (UAS) Research Platform," which was funded by Joint Program Committee-6 for Combat Casualty Care. This joint project is a collaborative effort between DPI, TATRC, and the US Army Aeromedical Research Lab (USAARL) to research future operational concepts that involve leveraging UAS to support combat casualty care and force health protection missions. Under this new contract, DPI will mature their DP-14 tandem rotor vertical takeoff and landing (VTOL) UAS platform to support planned flight tests and field evaluations. In a parallel effort, USAARL is developing a Data Acquisition System (DAS) which will capture vehicle acceleration effects and environmental data within the interior cargo space of the UAS. TATRC is taking the lead on project management and integration of the DAS and UAS systems.



The Dragonfly DP-14 tandem VTOL on display at the 2017 TATRC Spring Open House.

At the end of the first phase of this collaborative research effort, a field evaluation and demonstration of an emergency medical resupply mission will be conducted using a remotely piloted DP-14 UAS, with integrated DAS and medical resupply payload. Subsequent phases of this research project will focus on integrating autonomous command and control, medical data exchange, and enroute care capabilities. This demonstration will support the investigation of UAS-specific considerations for the safe transport of patients and medical equipment to inform future research and development of medical capabilities to support dispersed operations. "Ultimately, the DPI contract will provide a cost-effective UAS research prototype to develop and test methods of integrating medical capabilities with emerging multi-role UAS to support future medical operations when manned aircraft are not available or denied access," stated Mr. Nathan Fisher, TATRC Research Manager for Medical Robotics and Autonomous Systems. Dragonfly Picture's relationship with TATRC dates back to 2008 when they were awarded a Phase I Army SBIR to develop a UAS to reduce exposure of personnel and assets to CBRNE (Chemical, Biological, Radiological, Nuclear, Explosives) hazards. This research resulted in the development of the DP-12 platform, a smaller VTOL UAS with autonomous capabilities and a payload capacity of 150lbs. The DP-12 is the predecessor to the DP-14 UAS that is currently being developed by DPI under the JPC-6 research project with TATRC and USAARL. In addition to their SBIR effort, DPI has provided unwavering support at numerous field exercises and trained TATRC personnel in operating small UAS. Their expertise has played an invaluable role in the Operational Medicine Lab's research efforts involving the use of UAS.

'Bottom line', says the Operational Medicine Lab Manager, Dr. Gary Gilbert, "is that in order to do medical care research on relevant unmanned vehicles, you need a relevant unmanned vehicle; likewise, if you're trying to wisely invest your limited medical research dollars in medical research, versus platforms, you need access to an inexpensive platform." 

