TATRC's Support of Bold Quest 17.2 Exercise

Bold Quest 2017 is a Department of Defense led demonstration that brings military personnel from 14 countries to Savannah, GA to conduct communication and coordination exercises on Fort Stewart. United States military service members and NATO Headquarters staff are joined by troops from Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, New Zealand, Poland, Sweden and the United Kingdom. The demonstration looks towards interoperability by improving communication and information sharing across a wide variety of coalition networks and resources.


TEMPUS-PRO Dashboard

At Bold Quest 17.2 Exercise, TATRC provided direct support to PEO Aviation to demonstrate telemedicine capabilities over a variety of network architectures that were integrated into a Medical Evacuation (MEDEVAC) UH-60 Black Hawk helicopter. TATRC provided subject matter expertise as well as equipment, which allowed a PEO Aviation led team to meet their demonstration objectives and goals to transmit data over a variety of communication networks. The Tempus Pro physiological monitoring device with a receiving laptop (hosting i2i software) and Nett Warrior End User Devices (EUD) (hosting the USAFRL BATDOK app and the MC4 / TATRC DD1380 app) were used for the demonstration of in-flight telemedicine capabilities. The U. S. Army Aviation and Missile Research Development and Engineering Center's Software Engineering Directorate Aviation Interoperability Lab and Prototype Integration Facility personnel, along with TATRC personnel, conducted integration and validation of the system components over a 3G cellular network and an Iridium Satellite communications network at Hunter Army Airfield, GA. During the validation, the physiological monitor and the EUDs were able to transmit telemetry data, video, still imagery, and DD 1380 encounters with a stable communications link. These communications links were more stable than the tactical radio communications that were evaluated in the past. In addition to the 3G and iridium networks tested during Bold Quest patient evacuation missions, TATRC supported PEO Aviation in testing a "Through the Rotor" Satellite capability that maintained an uplink of 228 Kbps communication link from the antenna through the aircraft's rotor system operating at full speed to the satellite, and a downlink of 2.16 Mbps from the satellite through the rotor system to the aircraft antenna. The successful demonstration of these three network capabilities highlighted the potentially enhanced ability for a medic in flight to contact a medical provider anywhere around the world. With these types of communication systems integrated on MEDEVAC aircraft, a flight medic conducting operations in an austere or isolated environment can establish a vital connection from the middle of Africa back to the United States over Satellite or Cellular connections.

During the exercise, the Georgia Army National Guard MEDEVAC unit, Hurricane Force, provided support for the MEDEVAC mission scenarios. SSG Dietrich, an experienced MEDEVAC medic, conducted a week of MEDEVAC operations employing the aforementioned medical devices in flight throughout the Bold Quest Exercise. During the multiple MEDEVAC mission scenarios that took place each day, SSG Dietrich successfully documented and transferred medical telemetry and patient care information using the physiological monitor and Nett Warrior EUD, along with the BATDOK app and MC4 app. During the exercise, the 3G cellular provided the greatest communication capabilities between the medic in flight and the ground station in transmitting patient demographics, treatment, pictures, and video with the physiological monitor and with the EUD testing the ability to transmit the DD 1380 encounter. The added benefit with the 3G cellular and iridium systems testing is that it also provided the medic with the capability to make a voice connection with the EUD to the "home base," or to other phone lines that would further enhance telementoring communications.


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In summary, PEO Aviation was able to successfully demonstrate telehealth and telemedicine off-boarding capa-

bilities from MEDEVAC aircraft in flight using non-military, non-linear communication systems during the Bold Quest 17.2 Exercise. These systems will enhance evacuation platforms by providing worldwide communications and improving the quality of patient care over current MEDEVAC platforms and by providing clear and stable physiological monitor screens, and affording constant, quality patient assessments. SSG Dietrich stated, "I thoroughly enjoyed participating first hand in this exercise and actually using these real-world technological advancements that will improve patient care, as well as make a difficult job easier." She was also very pleased to have the opportunity to provide direct user feedback to improve the system and MEDEVAC operations.

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