

Integration of Secure Point-Of-Care Physiologic Data via Ultra-Wideband Communications for Special Operations Forces

“During a Foreign Internal Defense Special Operations Mission, a United States Special Forces Medic at a makeshift hasty clinic finds himself treating four coalition casualties as a result of direct actions against a subversive force. As he provides treatment, the medic is able to monitor the most severely injured casualty with a TEMPUS-Pro patient monitoring and telemedicine device while simultaneously monitoring the other three casualties with telemetry data generated on smaller Visi Mobile monitors and displayed on the TEMPUS-Pro screen. Likewise, he is able to post physiological monitoring data from all four patients to individual electronic DD1380 Tactical Combat Casualty Care cards on his Android Tactical Assault Kit (ATAK) End User Device (EUD). Noticing a significant change on the TEMPUS-Pro screen from one of the patients monitored with the Visi Mobile devices, the medic refocuses his efforts on that patient and generates an updated DD1380 on his ATAK EUD. Recognizing his unfamiliarity with the medical complications of the patient, the medic switches this patient to the TEMPUS-Pro device, sends the updated DD1380 to a surgeon, initiates remote telemonitoring through the Virtual Combat Critical Care program, and conducts a tele-consultation with the surgeon, augmented with medical telemetry and still images of the patient.”

The Operational Telemedicine Lab has partnered with the Product Manager, Special Operations Forces Survival, Support, and Equipment Systems (SOF SSES) to develop an integrated capability to enable Special Operations Medical Personnel to monitor patient status and document health-care rendered for multiple casualties. Through a new Phase III SBIR contract with a small Ultra-WideBand (UWB) communications company, the Tempus Pro Monitor fielded through the SOF SSES Casualty Evacuation Tactical Combat Casualty Care (TCCC) program, will be integrated with up to four Visi-mobile medical devices and the US SOCOM ATAK EUD through an UWB network to facilitate bi-directional data sharing between devices. TATRC’s Project

Manager, James Beach, stated “The networked medical devices are an incremental step towards augmenting the capabilities of the on-ground SOF medical personnel with remote monitoring and may provide the opportunity for decision support in the triage management of casualties.” The secure wireless capabilities will help preserve the freedom of movement of the on-ground clinical personnel. The light-weight portable capability is easily transportable and well-suited for use in vehicles and fixed operational bases. The patients’ information from the medical devices would be automatically populated into the DD Form 1380 with the SOF Medic’s treatment notes as described in the above scenario. Previous research has established the feasibility of importing the DD Form 1380 into the currently fielded deployable electronic health record. Future efforts would be geared toward the integration of medical decision support capabilities, as well as evaluating the feasibility of transferring the DD Form 1380 into the future electronic health record. The most significant challenge is monitoring the commercial partners’ willingness and ability to support the current and future integration of the product. 

