AFRL

BATMAN: ENHANCING AIRMAN SURVIVABILITY AND EFFECTIVENESS

Air Force Special Operations personnel face a number of challenges in the battlefield. Many of these can be attributed to the weight, over 100 pounds, and complexity of the gear they carry on a typical mission. The Battlefield Air Targeting Man-Aided kNowledge (BATMAN) program is aggressively working to eliminate these challenges by designing user-centric solutions.

BATMAN is an Advanced Technology Demonstration program that seeks to enhance the battlefield Airman's personal kit through rapid research and development. BATMAN has a multiple-disciplinary team of engineers and researchers, both military and civilian, that innovate novel solutions tailored for the human operator. The team works hand-in-hand with the operators to quickly design and prototype technologies that integrate with their kit supporting combat and humanitarian missions.

BATMAN KEY FACTS

- Directly supports the Air Force's Special Operations Forces and Personnel Recovery Missions.
- Has rapidly transitioned 35+ technologies.
- Uses a proven operator-centric design approach that yields high-user acceptance and integration into existing ensembles.

A collection of BATMAN developed technologies, shown integrated with the Battlefield Airman Operator Toolkit.

Photo Credit: U.S. Air Force graphic/Rick Eldridge

Benefits to the Warfighter

BATMAN's operator-centric research and development approach has yielded over 35 transitioned technologies. Delivered capabilities have proven to reduce operator fatigue and workload in austere combat environments; increase mission effectiveness; reduce tactical decision-making time and errors in accessing and transmitting mission information; and enhance battlefield situation awareness, communication and information processing.

BATMAN Initiatives

BATMAN has several projects under development that directly support Air Force Special Operations Forces and Personnel Recovery missions. Some of these projects are described below:

- Battlefield Assisted Trauma Distributed Observation Kit (BATDOK): is a revolutionary mobile tool in battlefield patient care. It provides an intuitive means to monitor multiple patients' vitals wirelessly, autonomously documents patient care, and transmits data throughout the patient's continuum of care.

- Handheld Electronic Audio Recording System (HEARS™): is a series of adaptable recording devices that can connect inline with fielded radios and aircraft intercom systems. It records all bi-directional input/output communications that can be reviewed later for after-action reports.

- Flashing Indicator of Swimmer's Health (FISH): is a personal underwater blood-oxygen monitor that detects potential blackout conditions and alerts users. This will help prevent shallow water blackouts experienced during water training events.

Air Force JTACS utilizing HEARS™ and companion app Hindsight™ during live close air support training exercise.

Photo Credit: Courtesy photo/BATMAN team

Air Force pararescueman using BATDOK app to monitor multiple patients' vitals.

Photo Credit: U.S. Air Force photo/Rick Eldridge

- Near Field Magnetic Induction (NFMI) Headsets: provide a short wireless personal area connection for audio and data that eliminates cables.

- Spatial Proximity Under-canopy Reporting Sensor (SPURs): is a foot-worn detection system that alerts the parachutists of their distance from the ground, assisting in low-light/night landings to avoid injury.

Impact

BATMAN supports over 13 Department of Defense organizations, has transitioned to six programs of record and has technology being utilized in four combat zones.

The program ensures rapid availability of tech to the warfighter by working closely with industry partners to shape new capabilities coming onto the market. It holds multiple patents and can license BATMAN inventions for commercial manufacture.

BATMAN is partnered with the Battlefield Airman Program Office to ensure complete buy-in from the Special Operations Forces and Personnel Recovery career fields and disseminate its innovative solutions as widely as possible.