

Department of the Navy SBIR/STTR Transition Program

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Topic # N123-152

Blast Exposure Dosimetry System (BEDS)

McQ Inc.

WHO

SYSCOM: MARCOR

Sponsoring Program: Marine Corps Systems Command (MCSC)

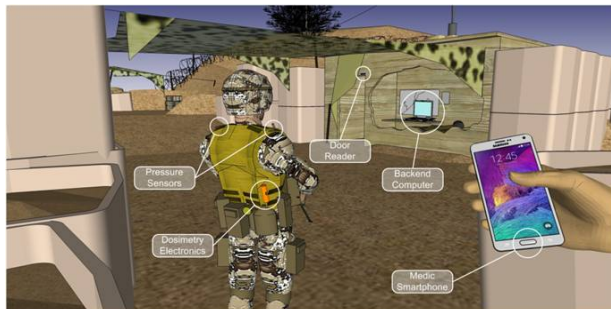
Transition Target: EOD personnel, EOD trainers, Medical researchers of EOD instructors, deployed soldiers/warfighters

TPOC:

sbir.admin@usmc.mil

Other transition opportunities:

- Army PM Soldier Protection and Individual Equipment (SPIE),
- USMC Vest Acquisition Program,
- MCSC Combat Support Systems (PM CSS),
- MCSC Infantry Combat Equipment (PM ICE),
- Army Program Executive Office (PEO) Solider



BEDS System Architecture

WHAT

Operational Need and Improvement: To develop a blast dosimetry system, capable of measuring the severity of a Warfighter's multiple blast exposures, accurately over the duration of an extended mission and across multiple missions. The systems' data is automatically stored and made available to medical personnel and researchers, which will be used to determine the likelihood of internal injury due to blast exposure, potentially reducing the amount of off duty time required.

Specifications Required: The military has a need for omnidirectional pressure reading of blast event, while filtering out non-blast events and effects, and operating the presence of a radio frequency (RF) jammer.

Technology Developed: Development of a complete dosimeter system (dosimeter, smart phone, door reader, backend computer). Dosimeter must integrate easily into existing PC and Improved Modular Tactical Vests (IMTV), provide a >9 month mission life, and all components (including pressure sensors) must survive the harsh mission environment.

Warfighter Value: Reduction in off duty time of Warfighter's, linkage of blast exposure to traumatic brain injury (TBI)

WHEN

Contract Number: M67854-14-C-6519 **Ending on:** January 20, 2016

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Prototype system demo for potential users	Low	Potential end users are interested in the system	TRL4	November 2015
Custom pressure sensor performance testing	Low	Reliable and predictable pressure measurements	TRL5	December 2015
Initial live fire testing, Electromagnetic interference (EMI) testing, and environmental analysis complete. Data shared with user community.	Low	Successful test results of BEDS system	TRL6	January 2016

HOW

Projected Business Model: McQ will manufacture the BEDS system and market it to the Explosive Ordnance Disposal (EOD) community, Warfighters, and government agencies that have EOD capabilities.

Company Objectives: Allow the medical research community to eventually link blast exposure to traumatic brain injury (TBI), through deploying all EOD personnel (and trainers CONUS) with BEDS and through analysis of the resulting data after each deployment of the BEDS system.

Potential Commercial Applications: Improve the safety of athletes (youth to professional athletes) by monitoring concussions.

Contact: Ron Knobler, Director of Engineering
rknobler@mcqinc.com (540) 373-2374