

Topic: N151-069

Perceptronics Solutions, Inc.

Medical Informatics Decision Assistance and Support (MIDAS)

AID-MEDIC (Assisted Informatics and Decisions for Medics) is an innovative suite of AI-driven software tools for situation awareness and decision support in mass casualty incidents, including optimal allocation of patients to hospitals. Perceptronics Solutions develops intelligent computing technologies that help people make better decisions when facing uncertainty or operating in high stress environments. AID-MEDIC is targeted at Navy and Marine Corps pre-hospital casualty care operations and at civilian emergency medical services. Competitive advantages come from faster and more effective field decision making leading to better immediate care and increased survival rates as well as better information handoff and patient tracking. AID-MEDIC features have been demonstrated in simulation, and the tools have been endorsed by the prestigious Los Angeles County Emergency Medical Services Agency.

Technology Category Alignment:

Combat Casualty Care

Biomedical Informatics / Health Information Systems & Technology

Biomedical Informatics / Health Information Systems & Technology

Military Operational Medicine

Machine Perception, Reasoning and Intelligence

Contact:

Dr. Gershon Weltman

gweltman@percsolutions.com

(818) 414-0855

<http://www.percsolutions.com/>

SYSKOM: ONR

Contract: N68335-17-C-0047

 Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-17-C-0047

Department of the Navy SBIR/STTR Transition Program

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WHO

SYSCOM: ONR

Sponsoring Program: Code 30

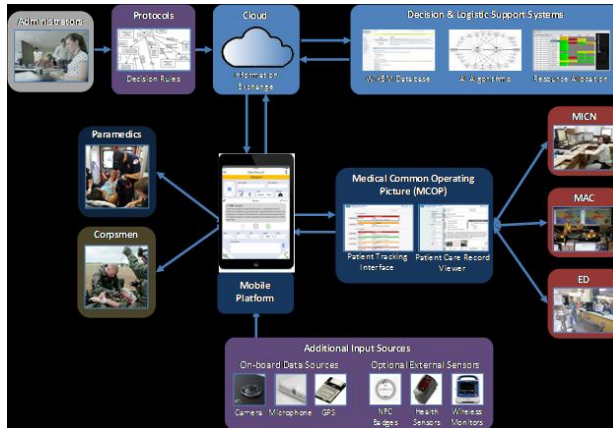
Transition Target: Los Angeles County Emergency Medical Services Agency

TPOC:

Dr. Rebecca Goolsby
rebecca.goolsby@navy.mil

Other transition opportunities:

Navy Medical Informatics and Decision Assistance Systems
Navy/Marine Corps Expeditionary Medicine
DHS FEMA
COCOM Humanitarian Assistance
Disaster Relief



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WHAT

Operational Need and Improvement: First, AID-Medic will be integrated in civilian Mass Casualty Incident and Emergency Care Services in a major city. Second, AID-Medic will be integrated into Navy initial corpsmen training and Expeditionary Warfare exercises. Finally, AID-Medic will be part of military and civilian hospital care and continued personnel training and education

Specifications Required: AID-MEDIC (Assisted Informatics and Decisions for Medics) is a suite of AI-driven software tools for mass casualty incidents. AID-MEDIC helps on-scene medical personnel “solve the puzzle” of rapidly identifying and classifying casualties and assigning them optimally to transport vehicles and receiving hospitals, while taking into account such variables as personal characteristics, type of injury, family connections, hospital capabilities and space availability, and even traffic conditions.

Technology Developed: Innovative combination of several advanced technologies including: Dynamic Agent based resource allocation, Artificial Intelligence reasoning & prediction, WikEM emergency medicine data base, and Human-Centered interface design

Warfighter Value: Help Navy and civilian corpsmen, paramedics and medical personnel meet the critical needs of field and pre-hospital care. provide a Medical Common Operating Picture (MCOP) for critical mass casualty incidents and other operational situations. Improve patient Allocation Efficiency (AE), with associated improvements in Hand-off time (HOT), ED Saturation Time (EDST), and Total EMS Time (TET). Reduce average and higher percentile times for On-Scene Interval and Total EMS Interval. Enable better measurement of response using Total Response Time (TRT) vs. current first-unit Response Time (RT). Provide more consistent measurement of pre-hospital indicators in MCI, and Improved Triage Signal Detection Measures.

WHEN

Contract Number: N68335-17-C-0047 **Ending on:** October 10, 2018

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Proof of Concept	N/A	EMS SME Acceptance	4	January 2017
Prototype Demonstration	Low	Simulated patient allocation	5	July 2017
Operational Evaluation	Med	Trial in civilian EMS situation	6	September 2017
Operational Demonstration	Med	Civilian Pilot Project(s)	7	March 2018
Initial Transition	Med	Navy Pilot Project(s)	8	June 2018

HOW

Projected Business Model: For civilian customers, we are waiting for a Request for Proposal from Los Angeles County for an emergency medical management system with requirements which we believe AID-MEDIC can meet. For Navy customers, we will have to go directly to program offices rather than primes to obtain trials leading to acquisition. Our primary value chain starts with the Navy Hospital Corpsman and extends to field medical facilities.

Company Objectives: Our objective for AID-MEDIC is to provide the Navy and EMS agencies with the next-generation in MCI response, using artificial intelligence to improve patient transport and allocation decisions; think AlphaGo (Google's AI) for deciding where MCI patients should be transported during the chaos and uncertainty of multiple casualties and diverse and heterogeneous receiving resources

Potential Commercial Applications: Is commercially applicable to all civilian Emergency Medical Service agencies, because it is set up for Mass Casualty Incidents (MCIs), so that the disaster is not moved to the next nearest facility, but instead patients are appropriately spread to available resources for optimal care. Can also be commercially supplied to the Navy, which may have various levels of medical resources on multiple different ships, but currently no decision assistance software to help determine where patients should go.

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gweltman@percsolutions.com 818-414-0855