

Medical Situational Awareness in the Theater

Advanced Concept Technology Demonstration (ACTD) FY05 Candidate

Lead Agency: Deployment Health Support Directorate

Technical Manager: USAMRMC-NHRC

Operational Manager: PACOM Surgeon

Transition Manager: HA-PEO JMIS

Functional Area Analysis (FAA):

- **Combatant Commanders lack timely, complete, actionable health information for operational decision-making thereby putting troops at unnecessary risk of illness or injury and jeopardizing force strength and morale.**
- **Current stovepipe info systems require intensive human manipulation and do not provide timely trend analysis or immediate warning alerts that identify risks.**

Functional Needs Analysis (FNA):

Capability Gap: Inability to provide real-time health risk information to operational decision-makers – which contributes to degraded mission performance and sustainability through diminished human performance, illness, injury, and death.

Functional Solution Analysis (FSA):

- **Solution Approach: Fuse current and emerging technologies and apply artificial intelligence and computerized decision support systems to transform collected, scattered data into timely, actionable information and knowledge.**
- **Secondarily, as a by-product, archive the data to establish a DoD repository for health surveillance information that provides reach back capability to Joint Force and Combatant Commanders, Joint Staff, Services, OSD, and others.**

Proposed ACTD deliverables:

- **Front-end connectivities and data capture technologies from sensor and software applications to increase data sources for enhanced availability and timeliness**
- **Adaptable communication capabilities consistent with DoD platforms, information assurance and security standards, and enterprise architecture**
- **Fusion technology to establish relational database(s) within a reliable, retrievable data repository**
- **Artificial intelligence and decision support tools which utilize scientifically-based medical guidelines and health risk criteria to turn data into actionable knowledge**

The ACTD will encompass:

- **Refinement of Medical Intelligence requirements, capture, and reporting to field commanders of health threats, hazard information, and force health protection data**

- Capture, fusion, analysis and reporting to commanders of medical information (e.g. physical trauma, psychological trauma data, and DNBI)
- Capture, fusion, analysis and feedback of occupational/environmental data
- Integration and fusion of individual/unit location data

Transition Strategy:

- ACTD will use spiral development to include capabilities over exercise periods. Feasible technologies will be spun off for early field operational evaluation and implementation.
- Successful technologies and operational concepts may be transitioned early to acquisition program of record for adoption and force structure fielding. The targeted program of record is the HA-PEO Joint Medical Information System (JMIS).
- At conclusion, final recommendations on military utility will be provided to Combatant and Medical commanders in the theater.

Advanced Concept Goals:

- Actionable medical knowledge can have a significant impact !!
 - Acts as a force multiplier by reducing attrition rates
 - OPTEMPO enhancer — optimized health and performance of warfighters
 - Morale booster
- Medical Situational Awareness ACTD provides:
 - Warfighters with the right info when needed
 - Data repository supporting longitudinal medical health of service members

The overall goal is:

The fusion of emerging technologies to collect, transmit, and analyze data to produce timely actionable information and knowledge to Field Commanders

<u>Task</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>Total</u>
Concept and Development	\$3M	\$3M	\$1M	\$1M	\$1M	\$9M
FT1	\$2M	\$4M				\$6M
FT2		\$5M	\$1M			\$6M
FT3			\$5M	\$1M		\$6M
Demo			\$3M	\$4M		\$7M
User/Evaluation		\$1M	\$1M	\$5M	\$9M	\$16M

Totals **\$5M \$13M \$11M \$11M \$10M \$50M**

Go to <http://www.ha.osd.mil/fhpr/default.cfm> to see more info and the briefing on this ACTD