



BIOLOGICAL DEFENSE

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Advanced Planning Briefing to Industry

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Outline



- **Overview**
- **S&T and Warfighter Needs**
- **Technical Challenges**
- **Acquisition Strategy / Funding / Schedule**
- **Upcoming Business Opportunities**
- **Contacts**



S&T Overview



The Senior S&T Manager for Detection Provides the Strategy and Implements the Development of New, Novel, and Innovative Science and Technology to Develop Concepts/applications that will Provide Information about the World Around Us to Make the Use of Chemical and Biological Weapons of Mass Destruction Irrelevant through Superior Science and Technology.



JPM-BD Overview



The JPM BD Provides Defensive Technology and Equipment to Detect and Identify Biological Threats in Near Real-time and to Collect and Assimilate Data for Commanders who Require an Understanding of the Biological Threat Situation in Their Areas of Operation. The Biological Defensive Systems are Critical to the Areas of SENSE, SHIELD, and SUSTAIN and Meet the Needs of the US Forces to Warn Personnel of Imminent Hazards (Pre-attack) and Aid in the Treatment of Personnel Exposed to a Biological Hazard (Post-attack).

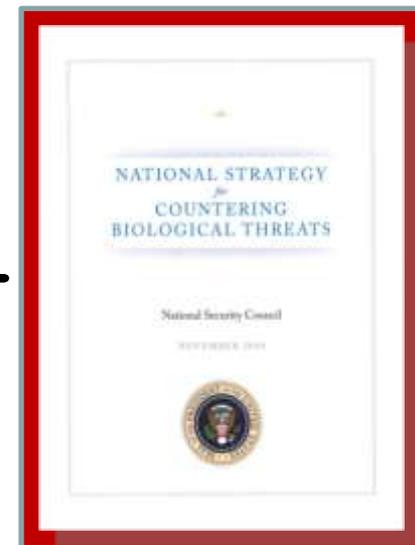


Overview

New Focus on Biological Defense



- **National Security Strategy**
 - Pursue New Strategies to Protect Against Biological Attacks
- **National Strategy for Countering Biological Threats, NSC Nov 2009**
 - “...Requires a Comprehensive Approach that Recognizes the Importance of Reducing Threats from Outbreaks of Infectious Disease Whether Natural, Accidental, or Deliberate in Nature”
 - “Reducing the Risks Presented by the Deliberate or Accidental Release of a Biological Agent Requires the Use of All Instruments of National Power...”
 - “Develop and Employ Complementary and Multi-layered Systems for ... Identifying....Biological Threats”
- **CPDP Program Strategy Guidance**
 - Protect Warfighters and be Poised to Defend Citizens





Overview

New Challenges for Biological Defense



- **New Policy – Bio-Surveillance Vision**
 - Pursue Cross-domain Integration of Sensors, C2 and Medical, etc.
- **Wartime Supplemental Funding Stopped/reduced**
 - Must Lower Cost to Operate & Sustain BD Systems
 - Reduce Use of Consumables and Consumable Costs
 - Improve Reliability and Reduce Maintenance Costs



War-fighter Needs Science & Technology (S&T)



- **Bio-Surveillance/Emerging Threat Focus**
 - Common Detection Platform for Medical & Environmental Samples
 - Detects Broad Spectrum of Agents
 - Highly Reliable, Selective and Sensitive
- **Stand off Bio-Detection and Discrimination**
 - Day/Night Operation
 - Lower False Alarm Rate
 - Network Ready
 - Enhanced Cloud Mapping and Tracking
 - Longer Discrimination Range (When Compared to JBSDS-1)
 - Reduced Size, Weight and Power (When Compared to JBSDS-1)
- **Bio-Point Detection**
 - Reduction in Lifecycle Costs (Extended Maintenance Cycle)
 - Reduction in False Detection Rate (40:1)
 - Increase Laser and Optics Life
 - 2 Level Maintenance Supportable



Technical Challenges



- **Agent Performance Characterization**
 - Enhance Detection/identification Algorithms
 - Enhance System Validation
- **Development of Signatures in the EM Spectrum Equal in Performance to that of Molecular Recognition Moieties**
 - Reduce Logistic Burden in Consumables and Labor
 - Enhance Response Time of Systems



Acquisition Strategy / Funding / Schedule



- **Rapid Agent Aerosol Detector**
- **Joint Biological Stand-off Detection System**

Rapid Agent Aerosol Detector (RAAD)

- ◆ **Description:** Component of the Joint Biological Point Detection System (JBPDS) Tech Refresh Effort:
 - Reduced Life Cycle Cost
 - Resolves Obsolescence Issues
- ◆ **Technologies Demonstrated:** Laser Induced Florescence and Spark Induced Breakdown Spectroscopy. Benefits over Existing Biological Agent Warning Sensor Includes:

- ◆ **Next MS:** None

- ◆ **Current Contract**

- Draft RFP Release Sep 10
- Contract Award Feb 11

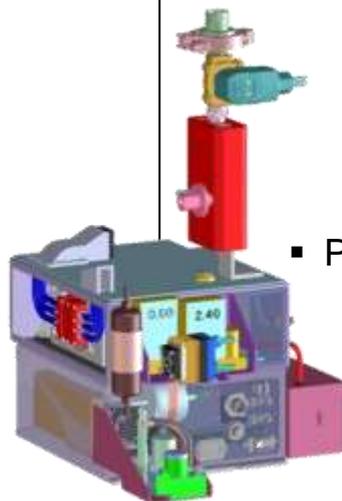
- ◆ **Acquisition Strategy:**

- 2 Phase Competitive Engineering Manufacturing Development with Production Option
- Testing and Validation including Whole System Live Agent Testing

- ◆ **Users:** Army, USAF, USN

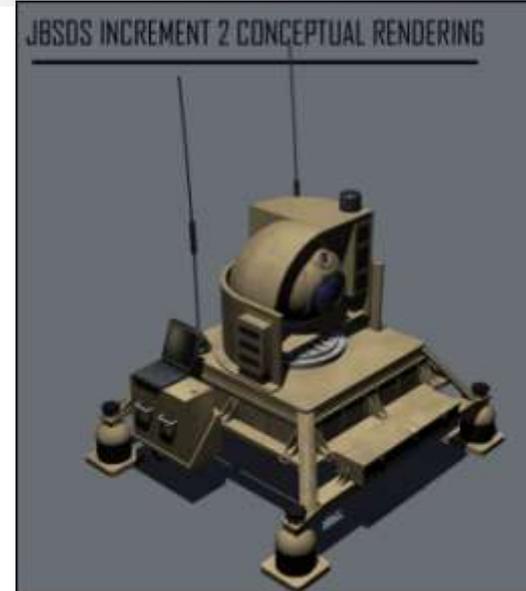
- ◆ **RAAD Development Plan:**

- Provide a Technology Refresh into the JBPDS
 - Increase Laser & Optics Life
 - Reduce False Detection Rate (40:1)
 - Reduce Lifecycle Costs (Extend Maintenance Cycle)
 - Supportable using 2 Level Maintenance
- Refresh Phase I - MIT-LL RAAD Technology Development:
 - Cost Plus Incentive
 - Miniaturize Technology to Meet JBPDS Requirements, Prototype, Test and Transition to Industry
 - Development for Reliability, ILS and Producibility
 - Deliverables: PDR, CDR, Prototype, DT, JBPDS Integration Support & Test Support
- Phase II -Technology Transition to Industry:
 - Fixed Price Incentive. Production
 - 60 Month Period of Performance



Joint Biological Standoff Detection System Increment 2 (JBSDS 2)

- ◆ **Description:** JBSDS 2 Provides Standoff Detection, Tracking, and Discrimination of Biological Warfare Agent (BWA) Clouds.
 - Allows Commanders Theater-wide Initial Early Warning Capability Against BWA Attack
- ◆ **Technologies Demonstrated:**
 - Depolarization (Depol)
 - Long-Wave Infrared (LWIR)
 - Laser Induced Fluorescence (LIF)
 - Differential Scattering (DISC)
 - Mid-Wave Infrared (MWIR)



- ◆ **Next MS:** MSA 1QFY11
- ◆ **Current Contract:** None
- ◆ **Acquisition Strategy:**
 - Competitive Prototype TD Contract (Up to 3) – RFP 2QFY11
 - Tech Demo VI and TRA in FY13
 - Milestone B 1QFY14
 - Competitive EMD Contract - RFP 1QFY14
 - LRIP/Production Option
- ◆ **Users:** Army, USAF, USMC

- ◆ **Capabilities:**
 - Day/Night Operation
 - Lower False Alarm Rate
 - Network Ready
 - Enhanced Cloud Mapping and Tracking
 - Longer Discrimination Range
 - Reduced Size, Weight and Power
- ◆ **Requirements**
 - ICD



S&T Schedule



Fiscal Year	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Joint Bio Standoff Detection	█	█	█	█	█	█		
Agent Performance Assessment	█	█	█	█	█	█		
Algorithm Development	█	█	█	█	█	█	█	█
Genomic Sequencing	█	█	█	█	█	█		
Backgrounds and Interferents	█	█	█	█	█	█		
Source Development	█	█	█	█				
Detection of Threats on Surfaces	█	█	█	█	█	█		



Program Schedule



Fiscal Year	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
RAPID AGENT AEROSOL DETECTOR								
System Design and Prototyping		█	█	█	█			
Development and Operational Test				█	█	█	█	
Production						█	█	█
JOINT BIOLOGICAL STAND-OFF DETECTION SYSTEM								
Competitive Prototyping	█	█	█	█	█	█		
System Design and Prototyping						█	█	█
Development and Operational Test							█	█
Production								█



 **Program Milestone**



S&T Funding (\$M)

PB11



Year/ Funding	FY11	FY12	FY13	FY14	FY15	TOTAL
6.2	26.4	24.9	21.8	21.6	22.2	116.9
6.3	9.3	15.3	19.9	20.3	21.0	85.8
TOTAL BUDGET	35.7	40.2	41.7	41.9	43.2	202.7

Note: Funds Above are Planned or Projected Numbers from the FY11 President's Budget not yet Approved by Congress.



Program Funding (\$M) PB11



Year/ Funding	FY11	FY12	FY13	FY14	FY15	TOTAL
RDT&E	61.7	42.7	35.3	29.7	19.8	189.2
OSD PROC	43.6	49.6	91.7	123.2	141.6	449.7
Army PROC	150.4	0	0	0	0	150.4
TOTAL	255.7	92.3	127.0	152.9	161.4	789.3

Note: Funds Above are Planned or Projected Numbers from the FY11 President's Budget not yet Approved by Congress.



S&T Upcoming Business Opportunities



OPPORTUNITY	TIME-FRAME
Algorithm Development – NSF http://www.nsf.gov/pubs/2010/nsf10540/nsf10540.htm	Posted Now
CB Technologies Directorate New Initiatives BAA	
– For New Start Projects (FY2012 - FY2013)	4QFY10
CB Defense Small Business Innovation Research (SBIR)	
– http://www.acq.osd.mil/sadbu/sbir/homepg.htm – For New Start Projects (FY2011 - FY2016)	4QFY10



Program Upcoming Business Opportunities



OPPORTUNITY	TIME-FRAME
JBSDS 2 Technology Development Contract (with EMD Options) – USASMDC Acquisition Center (Full and Open Competition)	RFP 2QFY11
Rapid Agent Aerosol Detector (RAAD) Technology Transition	
– USRDECOM Contracting Center (Full and Open Competition)	Award 2QFY11



S&T Points of Contact



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Program Points of Contact



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