



NBC CONTAMINATION AVOIDANCE

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Advanced Planning Briefing to Industry

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Outline



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- **Joint Product Manager, Reconnaissance and Platform Integration**
 - Science and Technology Challenges
 - Warfighter Needs / Program Overview / Acquisition Strategy
- **Product Director, Point Detection**
 - Science and Technology Challenges
 - Warfighter Needs / Program Overview / Acquisition Strategy
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 - Science and Technology Challenges
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Overview



S&T

- **Vision**
 - **Make the Use of Chemical and Biological Weapons of Mass Destruction Irrelevant through Superior Science and Technology.**
 - **Mission**
 - **Research, Develop, and Demonstrate Innovative Technologies and Capabilities to Mitigate the Threat and/or Effects of Chemical and Biological Events.**
-

JPM NBC CA

- **Strategic Vision**
 - **Equip and Sustain the World's Most Capable, Powerful, and Respected Joint Forces with World Class Chemical, Biological and Radiological Contamination Avoidance Products, Capabilities, and Services.**
- **Mission**
 - **The Joint Project Management Team for Nuclear, Biological, and Chemical Contamination Avoidance is Responsible for the Development, Production, Integration, Testing, and Fielding of NBC Detection, Obscuration, and Reconnaissance Systems. We Ensure that our System Developments, Integration Efforts and Services Focus on the Joint Warfighters' Needs within Cost, Schedule, Performance and Risk.**



JPM NBC CA Organization



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NO PICTURE AVAILABLE

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Joint Product Manager Reconnaissance and Platform Integration



DR/MS SKO



- **S&T Needs and Technical Challenges**

- **Non-textbook Algorithms in Signal Processing and Decision Logic**
- **Data Fusion**
 - **Organization of Data to Support Decision Making at Multiple Levels of Leadership**
- **High Performance, Low Power, Mass Produced Components**
- **Integration of Cutting Edge Technology into Harsh Environments with Sufficient Independent Testing**
- **First Principle Models on Technologies Linked with Engineering Principles to Provide a Virtual System**
- **Constant Evolutionary Improvements in Technology; How to Decide When to Continue or Terminate**

DR SKO

◆ Description:

- Set of Mission Specific Kits Produced to Provide an Increased Capability for Conventional Joint Forces to Conduct:
 - Dismounted CBRN Reconnaissance
 - WMD Detection or Denial
 - Characterization of Hazardous Materiel Events or Accidents

◆ Events:

- | | |
|------------------|--------|
| • MS B | Sep 10 |
| • PDR | Dec 10 |
| • CDR | Feb 11 |
| • MS C / LRIP | 3QFY12 |
| • LRIP Award | 3QFY12 |
| • MOT&E | 1QFY13 |
| • FRP | 3QFY13 |
| • FAT | 4QFY13 |
| • IOC/FOC (USN) | 4QFY14 |
| • IOC (USAF) | 3QFY15 |
| • IOC (USA) | 4QFY15 |
| • FOC (USAF/USA) | 3QFY16 |



◆ Status / Strategy

- Requirements Status
 - CDD Approval Expected Sep 10
 - CPD to the FCB TBD
 - CPD to the JCB TBD
- Acquisition Strategy / Status
 - Single Step to Full Capability
 - GOTS/COTS NDI

Program	FY11	FY12	FY13	FY14	FY15	FY16
DR SKO	6.4	6.5	6.5	6.5	6.5	6.5

Legend: 6.4 (Green), 6.5 (Blue), PROC (Red), Sustainment (Grey)



MS SKO



◆ Description:

- Set of mission specific kits produced to provide an increased capability for conventional joint forces to conduct:
 - Dismounted CBRN reconnaissance
 - WMD detection or denial
 - Characterization of hazardous materiel events or accidents
 - CCSI Compatible sensors
 - NTA detection
 - Unmanned Ground Vehicle (UGV)

◆ Events: TBD

- MDDR FY13

◆ Status / Strategy

- Requirements Status
 - CDD to the FCB TBD
 - CDD to the JCB TBD
- Acquisition Strategy / Status
 - Evolutionary acquisition strategy based on phased incremental development using COTS and NDI equipment

Program	FY11	FY12	FY13	FY14	FY15	FY16
MS SKO				6.4	6.5	6.5

Legend: 6.4 (Green), 6.5 (Blue), PROC (Red), Sustainment (Grey)



Summary



- **The Program is Looking for COTS/NDI Systems for Rapid Integration into SKO**
- **Goal: Insert the Latest Proven Technology into the SKO**
 - Technology Needs to have Independent Test Data
 - Change SKO Based on Increased Capability and Change in Threat
- **Government is Always Looking for:**
 - Qualified Personnel Protection Ensembles
 - CCSI Compatible Sensors
 - NTA Detection
 - “Rugged” Sensors (Operate in Extreme Environments)
 - Common Batteries/longer Batter Life
 - Multi-functional Sensors
 - Enhanced Reliability, Availability and Maintainability Systems



Product Director Point Detection



Next Generation Chemical Point Detectors



- **S&T Needs and Technical Challenges**
 - **Next Generation Chemical Point Detector**
 - **Expand the Number of Detectable Compounds**
 - **Vapor, Liquid, and Solids**
 - **Reduction of False Alarm Rates; Improved Selectivity**
 - **Increase Sensitivity**

- **S&T Capability Strategy**
 - **Micro-Electro-Mechanical Systems (MEMS) System Concepts**
 - **MEMS Fourier Transform Infrared (FTIR) (spectroscopy), Gas Chromatograph (GC), Mass Spec**
 - **Improve Component Performance**
 - **Single Particle Flow thru Spectroscopy**



Next Generation Chemical Point Detectors



◆ Description:

- Improve Selectivity and Sensitivity on Multiple Platforms and Personnel
- Mission areas: Non-Traditional Agents, M4 JCAD Capability + Ships, Aircraft, Unmask, decontamination Verification
- Increase Detectable Compounds in Multiple Environments
- Size
 - Handheld Optimal
 - Man-portable Acceptable
 - Large for Fixed-site may be Acceptable if Capability Increase Warrants

◆ Events:

- TRE FY11
- MDD FY11
- AoA FY12-13

◆ Status / Strategy

- Requirements Status
 - CDD to the FCB TBD
 - CDD to the JCB TBD
- Acquisition Strategy / Status
 - Full and Open Competitive Development

Program	FY11	FY12	FY13	FY14	FY15	FY16
NGCPD	6.4			6.4	6.4	6.4

Legend: 6.4 (Green), 6.5 (Blue), PROC (Red), Sustainment (Grey)



Product Director Standoff Detection

Non Contact, Low Volatility Surface Contamination Detection – TRE

- ◆ **Description:** Provide risk Reduction Enabler Potentially Supporting Multiple Missions within JPEO
 - Determine State of Art Capability -TRL
 - Support NTA Technology Refresh for Rapid Fielding Initiative (RFI)
 - Support Next Generation Chemical Point Detector Market Surveys
 - Support Manned/unmanned Reconnaissance (PEOI-Mule, MDARS, NBCRV, RAZOR, JLTV, etc)



- ◆ **Contractor:** TBD
- ◆ **Capabilities:**
 - CWA, TIC, & NTA Detection and Identification
 - On-the-move (45+ Mph)
 - Near Real-time (~2s)
 - Non-contact Stand-off (1-10 Meters)

- ◆ **Overarching Strategy:**
 - Technology Evaluation Contract to Procure Systems and Test Evaluation Support
 - Competitive Prototype, up to 3 Awards
 - Prototype Integration executed by Edgewood Chemical Biological Center (ECBC) Advance Design and Manufacturing (ADM) Team

6.4 6.5 PROC Sustainment

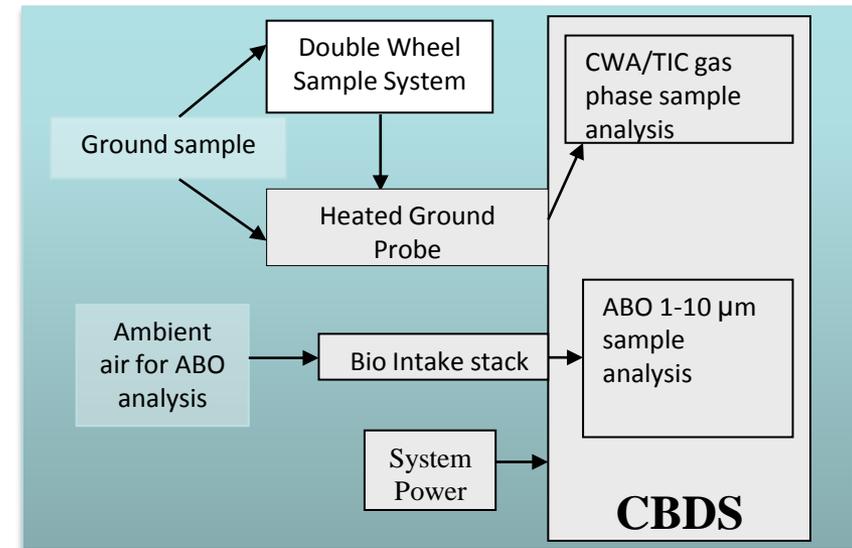
Program	FY11	FY12	FY13	FY14	FY15	FY16
Non-Contact, Low Volatility Surface Contamination Detection – TRE						



Chemical Biological Detection System (CBDS)



- ◆ **Description:** CBDS is an Automated System Designed to Detect and Identify CWAs, TICs, and BWAs. Provide a Single Standardized Detection and Presumptive ID System to Support Missions Across the JPEO-CBD Portfolio
- ◆ **Better than Legacy System:**
 - Reduces Size Weight and Power from Current Systems providing similar Capabilities
 - Reduces Logistics Burden by Combining Functions into a Single System



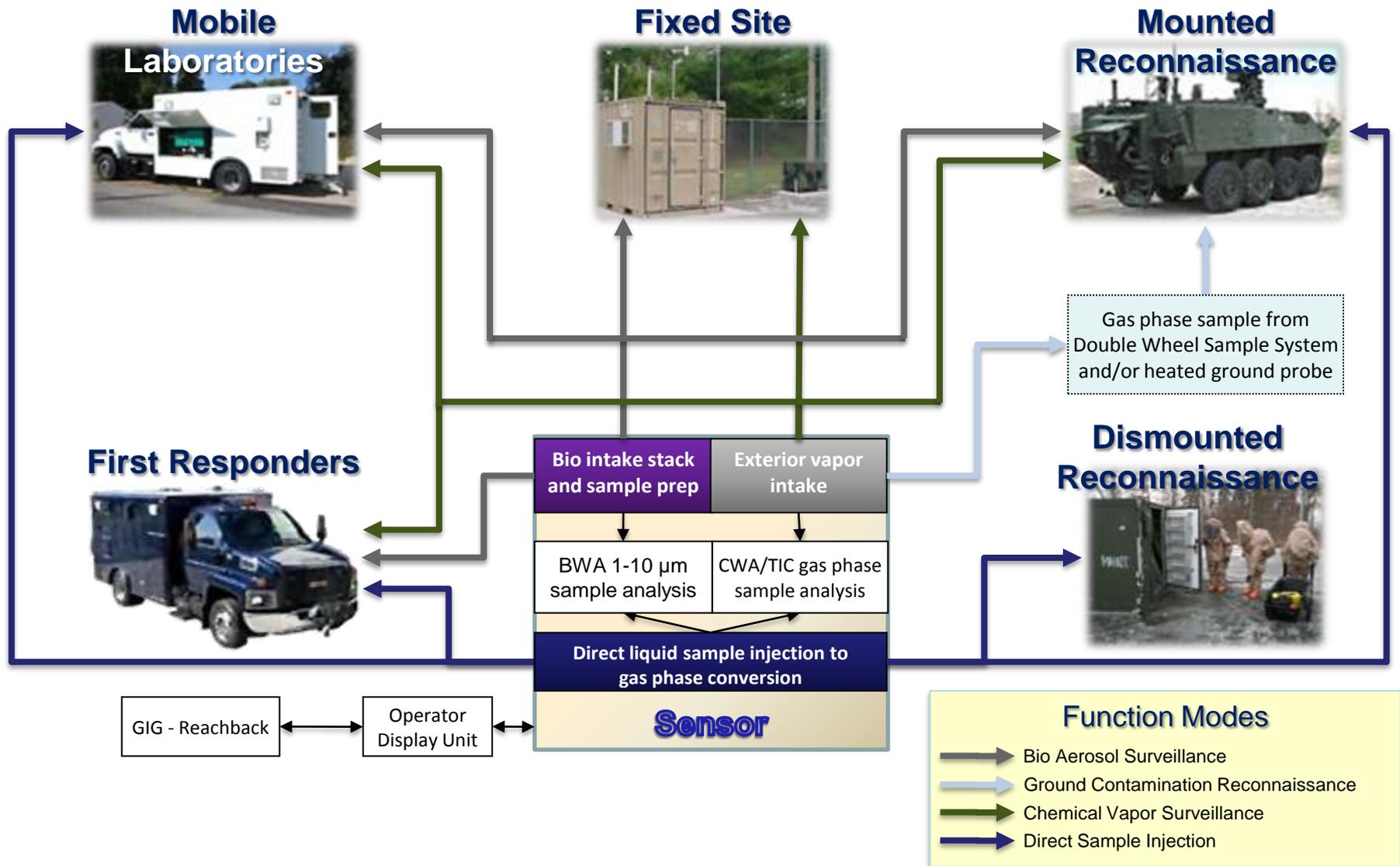
- ◆ **Next MS:** TRE 2QFY11
- ◆ **Current Contract:** Four Tasks Awarded: W911SR-10-D-0009; W911SR-10-D-0001; W911SR-10-D-0005; W911SR-10-D-0007 Cost Plus Fixed Fee (Task Orders of the CBRNE Mission Support Contract)
- ◆ **Acquisition Strategy**
 - Competitive Contract (IDIQ) for a CWA/TIC/BWA
 - Fully develop BWA capability for NBCRV Sensor Suite Upgrade
 - Production Option for CWA/TIC Capability
 - Government will Test to Validate Products and Integration onto Platforms
- ◆ **Users:** Army, Others TBD

- ◆ **Capabilities:**
 - BWA Aerosol: Equal to or Better than JBPDS
 - CWA Liquid/Solid: Equal or Better than CBMS II
 - Upgradable and Expandable Library for New Threats
 - Reduced Logistics
- ◆ **Requirements**
 - JBPDS CPD
 - NBCRV CPD

Program	FY11	FY12	FY13	FY14	FY15	FY16
CBDS	6.4	6.5	6.5	6.5	6.5	6.5

Legend: 6.4 (Green), 6.5 (Blue), PROC (Red), Sustainment (Grey)

CBDS Functional Concept



Function Modes

- Bio Aerosol Surveillance
- Ground Contamination Reconnaissance
- Chemical Vapor Surveillance
- Direct Sample Injection



Product Director Test, Equipment, Strategy and Support



Test and Evaluation Infrastructure



- **S&T Needs and Technical Challenges**
 - **Ability to Assess Components and Full Systems in a “Real” Biologically Contaminated Environment**
 - **Ability to Assess Components and Full System in a “Real” Chemically Contaminated Environment**
 - **Ability to Use Laboratory and Controlled Chamber Test Data to Predict System Performance for Environments that are Not Practical to Assess**
- **S&T Capability Strategy**
 - **T&E Realism - Sufficient Understanding of Behavior of “Real World” vs Simulation**
 - **Facilities that can use “Real” Warfare Agents**
 - **Standardized T&E Methodologies**

Biological Standoff Test Chamber

- **Program Overview**

- **Effort Description:**

- Design and Fabricate a BL3 Facility to Conduct Live Agent Testing of Bio Standoff Detection Systems
 - Capability Located at Dugway Proving Ground

- **Schedule: FY12 – FY14**

- **Acquisition Approach: Contract to Fabricate and Install the System in FY12**

- Request for Proposal: 4QFY11

- **Program Technical Challenges**

- Design and Fabricate a BL3 Facility to Conduct Live Agent Testing of Bio Standoff Detection Systems.

- **Program Acquisition Strategy**

- **Contract Strategy**

- RDECOM Acquisition Center (Full and Open Competition)



■ 6.4
 ■ 6.5
 ■ PROC
 ■ Sustainment

Program	FY11	FY12	FY13	FY14	FY15	FY16
Biological Standoff Test Chamber						

Chemical Biological Agent Resistance Test (CBART)

- **Program Overview**

- **Effort Description:**

- Design and Fabricate an Improved Material Swatch Test Fixture for Agent Resistance Testing of Barrier Materials Over a Range of Controlled Environmental Conditions
 - Capability Located at Dugway Proving Ground

- **Schedule: FY13-FY17**

- **Acquisition Approach: Contract**

- Request for Proposal: 4QFY12

- **Program Technical Challenges**

- Design and Fabrication of a Swatch Test Fixture That Operates Over a Wide Range of Controlled Environmental Conditions.

- **Program Acquisition Strategy**

- **Contract Strategy**

- RDECOM Acquisition Center (Full and Open Competition)



■ 6.4
 ■ 6.5
 ■ PROC
 ■ Sustainment

Program	FY11	FY12	FY13	FY14	FY15	FY16
CBART						



S&T Schedule



Fiscal Year	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Chem Standoff (surface)	RDTE						
Algorithm Development	RDTE						
Next-Gen Chem Point	RDTE						
NTA Facility	RDTE						

RDTE
 PROC
 MS



Program Schedule



PD/JPM	Program	FY11	FY12	FY13	FY14	FY15	FY16
RPI	NBCRV Stryker	PROC	PROC	PROC	Sustainment	Sustainment	Sustainment
RPI/SO	JSLSCAD	PROC	PROC	PROC	Sustainment	Sustainment	Sustainment
RPI/SO	CBMS	PROC	PROC	PROC	Sustainment	Sustainment	Sustainment
RPI	DR SKO	6.5	6.5	6.5	6.5	6.5	6.5
RPI	MS SKO				6.4	6.5	6.5
Point	NGCPD	6.4			6.4	6.4	6.4
Standoff	CBDS	6.5	6.5	6.5	6.5	6.5	6.5
TESS	TESS	6.4	6.5	6.5	6.4	6.4	6.4





S&T Funding (\$M) (FY11 President's Budget)



YEAR/ RTDE	FY11	FY12	FY13	FY14	FY15	TOTAL FY11-15
6.2	26.4	24.9	21.8	21.6	22.2	123.1
6.3	9.3	15.3	19.9	20.3	21.0	92.1
TOTAL BUDGET	35.7	40.2	41.7	41.9	43.2	215.2



Program Funding (\$M) (FY11 President's Budget)



YEAR/ RTDE	FY11	FY12	FY13	FY14	FY15	TOTAL FY11-15
6.4	35.4	15.7	33.2	20.3	21.1	125.6
6.5	114.2	81.0	72.7	68.9	47.7	384.4
Proc	82.2	139.7	221.7	184.6	187.9	816.1
TOTAL BUDGET	231.8	236.4	327.6	273.7	256.8	1326.2



S&T Business Opportunities



OPPORTUNITY	TIME-FRAME
Algorithm Development (Annual)	
– NSF BAA http://www.nsf.gov/pubs/2010/nsf10540/nsf10540.htm	Open now
CB Defense Physical Science and Technology (Bi-annual) BAA	
– For New Start Projects (FY10-15)	November 2010
CB Defense Small Business Innovation Research (SBIR)	
– http://www.acq.osd.mil/sadbu/sbir/homepg.htm	
– For New Start Projects (FY10-15)	Mid-Nov 2009



Program Business Opportunities



OPPORTUNITY	TIME-FRAME
Point Detection	
– TRE	FY11
Chemical Biological Detection System (CBDS)	
– TRE	2QFY11
Non Contact, Low Volatility Surface Contamination Detection – TRE	
– RDECOM Acquisition Center (Full and Open Competition)	RFP 4QFY10
Biological Standoff Test Chamber	
– RDECOM Acquisition Center (Full and Open Competition)	RFP 4QFY11
Chemical Biological Agent Resistance Test (CBART)	
– RDECOM Acquisition Center (Full and Open Competition)	RFP 4QFY12
Dismounted Reconnaissance – Sets, Kits and Outfits (DR SKO)	
– Partnering Opportunities with ICx (FLIR)	FY11
Next Generation Chemical Point Detection (NGCPD)	
– RDECOM Acquisition Center (Full and Open Competition)	RFP 3QFY14



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