COLLECTIVE PROTECTION

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Advanced Planning Brief to Industry

STANLEY A. ENATSKY, PE
JPM COLLECTIVE PROTECTION
Joint Program Executive Office
for Chemical and Biological Defense
stanley.enatsky@navy.mil

DR. CHARLES BASS, PHD
CAPO FOR PROTECTION
Joint Science and Technology Office
for Chemical and Biological Defense
charles.bass@dtra.mil

Outline

- **Program Overview**
- **Science and Technology and Warfighter Needs**
- **Technical Challenges**
- **Acquisition Strategy/ Funding/ Schedule**
- **Upcoming Business Opportunities**
- **Contacts**

Science & Technology (S&T) Overview

- **<u>Overall Objective</u>: Develop S&T that will protect the warfighter from the full range of Chemical and Biological Agents by supporting acquisition programs of record and providing the material developer with innovative and revolutionary alternatives that meet the user's objectives. Focus on:**
  - **Reduce the Power, Weight, Volume and Operations and Maintenance Costs**
  - **Simplify and Increase the Through-put Rate for Safe Ingress/Egress**
  - **Enhancing Liquid and Solid Aerosol Protection**
  - **Improving Toxic Industrial Chemicals/Toxic Industrial Materials Protection**

What is Revolutionary?

$135 Billion[1] Apollo program makes 6 landings on the moon and stimulates development of many spin-off technologies including integrated circuits and fuel cells. Journey has not been repeated in over 34 years.

1. Adjusted to 2006 dollars

Automatic rifle designed by Mikhail Kalashnikov and introduced in 1947 is revered for its simplicity and reliability. Produced worldwide and used by 55 national armies, it has become a cultural icon.

Program Overview

- **Mission:**
  - **In Support of the National Military Strategy, Research, Develop, Procure, Field and Dispose of Collective Protection Equipment and Systems that Protect Personnel and Equipment Within Controlled Boundaries From Chemical, Biological, Radiological and Toxic Industrial Contamination**
- **Collective Protection Systems:**
  - **Protection by Creating Toxic Free Areas that Allow Occupants to Operate Safely at Near-normal Levels Independent of Surrounding Hazardous Environments**
  - **Stand- Alone or Sub-systems that Integrate into Various Platforms:**
    - **Fixed Assets (Buildings)**
    - **Mobile Assets (Aircraft, Ships, Vehicles)**
    - **Transportable Assets (Hard & Soft Shelters)**

Program Overview *(Cont'd)*

- **Technology Readiness Evaluations FY05-07**
  - **Technology Areas of Interest**
    - **Chemical Biological Barrier Materials & Quick-Erect Structures**
    - **Support Equipment for Collective Protection**
    - **Whole CP Systems**
    - **Air Purification**
  - **Industry Interest: 66 Technical White Papers**
  - **Mature Technologies: 40 Detailed Briefings**
  - **Industrial Opportunities: 10 New Industries**
  - **Government Tested: 34 Technologies**
  - **Technology Readiness Levels (TRL) Assigned**
    - **Testing Results Promulgated to Participating Industry Partners**
      - **TRL Feedback to Industry (Less Air Purification) – Completed April 2006**
      - **TRL for Air purification – 2QFY07**

S&T Needs

- **Near Term (FY08 – FY10) Objectives**
  - Regenerative and/or Reactive Filtration
  - Expedient Encapsulation
  - Improved Closures and Barrier Materials
  - Collective Protection Engineering Design Model
  - Standardized Test and Evaluation (T&E) Methodologies
- **Mid Term (FY10 – FY13) Objectives**
  - Novel Systems Approaches
  - Simplified Ingress/Egress Systems
  - Advanced Filtration Technologies
- **Far Term (FY14 & Beyond) Objectives**
  - Intelligent Collective Protection Shelters

Program Warfighter Needs

- **Enhanced Air Purification**
  - **Reduced Air Flow Resistance in Single-pass Filter Systems**
  - **Regenerative or Filter Less Technologies to Remove or Destroy Hazards**
  - **Logistical Enhancements (Weight, Cube, Power, Consumables)**
- **Mobile Platform Protection**
  - **Egress From Mobile Platforms Without Compromising Protection**
  - **Saturation/Performance Indicator for Air Purification System**
- **Expeditionary Collective Protection**
  - **Shelter Systems that Maintain a Toxic Free Area with Reduced Logistical Burden**
  - **Optimized Ingress/Egress of Personnel and Materials without Compromising Protection**

S&T Technical Challenges

- **Air Purification**
  - **Tailorable Adsorbents for Low-molecular Weight Chemical Vapors**
  - **Energy Efficient Reactive/Regenerative Processes**
  - **Highly-efficient, Low-resistance Sub-micron Particulate Removal**
  - **Residual Life Indicators**
- **Textile and Material Science**
  - **Ultra-thin, High-strength, and Flexible/Tactile Barrier Materials**
  - **Stable, Selectively Reactive, Self-detoxifying Materials**
  - **Intelligent (Switchable), Controlled Permeable Materials**
  - **Strippable and Self-detoxifying Barrier Coatings**
- **Systems Science**
  - **Rapid Ingress/Egress Technologies**
  - **Dual-use Technologies**
  - **Novel Approaches To Collective Protection**

Program Technical Challenges

- **Integration with Platforms, e.g., Expeditionary Fighting Vehicle, Future Combat System, Littoral Combat Ship**
  - **Non-intrusive Integration**
    - **Designing for Modularity and Component Flexibility**
    - **Minimize Footprint Burden to Platforms**
- **Protect Against**
  - **Toxic Industrial Chemicals / Toxic Industrial Materials**
  - **New Threat Agents**
- **Maintain Overpressure for Ingress/Egress in Vehicles**
- **ColPro for Aircraft**
- **Reducing / Eliminating Consumables**
- **Reducing Consumable Costs**

S&T Capability Strategy

- **Overall: Support Joint Expeditionary Collective Protection (JECP) Program:**
  - **Execute Near Term Transitions for Insertion into Increment 2**
  - **Continue to Invest in Revolutionary Technologies; Exploit Short-term Success to Improve JECP**
  - **Explore Far-term Novel Concepts that Support a Systems-of-systems Approach**

- **Test and Evaluation: Develop Methodologies to Support Transition of New Technologies and Field JECP**

Program Acquisition Strategy

- **Joint Expeditionary Collective Protection**
  - **Full and Open Competition for a Systems Integration Team to Deliver Production-ready Test Articles and Final Production Units**
  - **Reduced Risk Through Early Technology Demonstrations and Limited Operational Experiments**
  - **Incremental Fielding Aligned with Maturity of Technologies**
- **Major Defense Acquisition Programs**
  - **Organize CP Office Along MDAP Lines (i.e., mobile, ships, fixed site)**
  - **Assist Programs with CP Designs and Integration Strategies**
  - **Deliver CBDP Furnished Systems, When Required**
  - **Support System Integration and Platform Test Strategies**

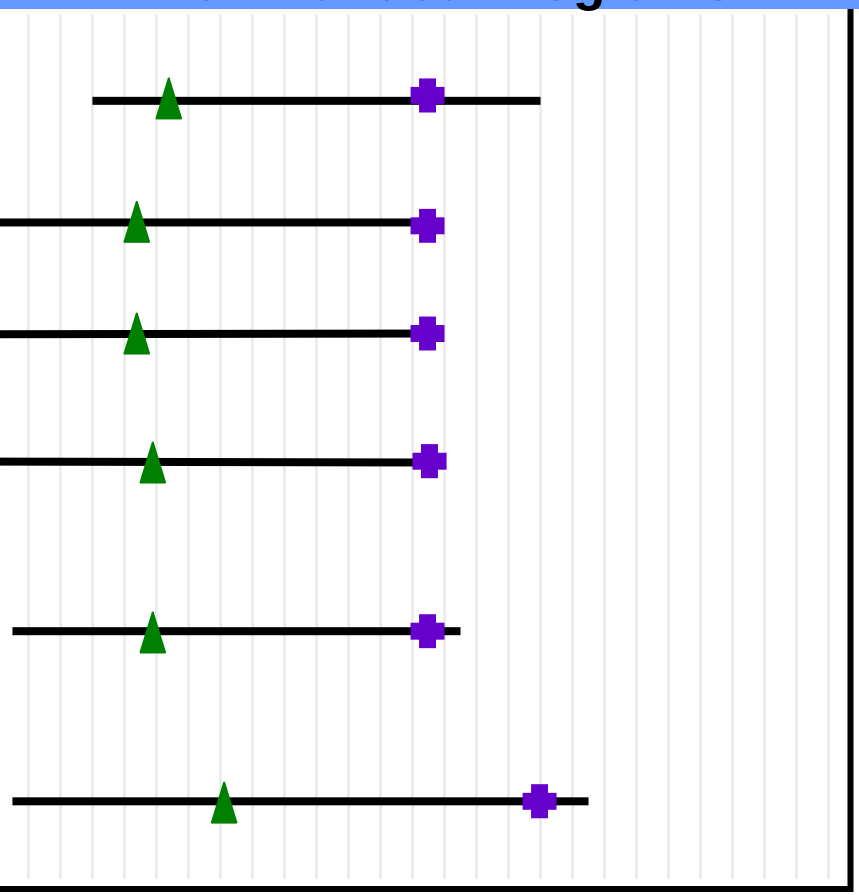
Program Acquisition Strategy *(Cont'd)*

- **Mobile Collective Protection Systems (MCPS)**
  - **M1 Abrams Main Battle Tank**
  - **Light Armored Vehicle**
  - **Unmanned Aerial Vehicle**
  - **M2/M3 Bradley Fighting Vehicle**
  - **Future Combat System**
  - **Expeditionary Fighting Vehicles**
  - **Joint Light Tactical Vehicle**

Program Acquisition Strategy *(Cont'd)*

- **Shipboard Collective Protection (Ship-CPS)**
  - **Littoral Combat Ship**
  - **Guided Missile Destroyer/Cruiser**
  - **Amphibious Assault Ship Replacement**
  - **Amphibious Transport Dock**
  - **Joint Maritime Assault Connector**
- **Fixed Collective Protection System (FCPS)**
  - **JPM – Guardian On-Demand CP System**
  - **MILCON**
  - **Major Commands**
  - **Department of State**
  - **Department of Homeland Security**

S&T Program Schedule/Transition

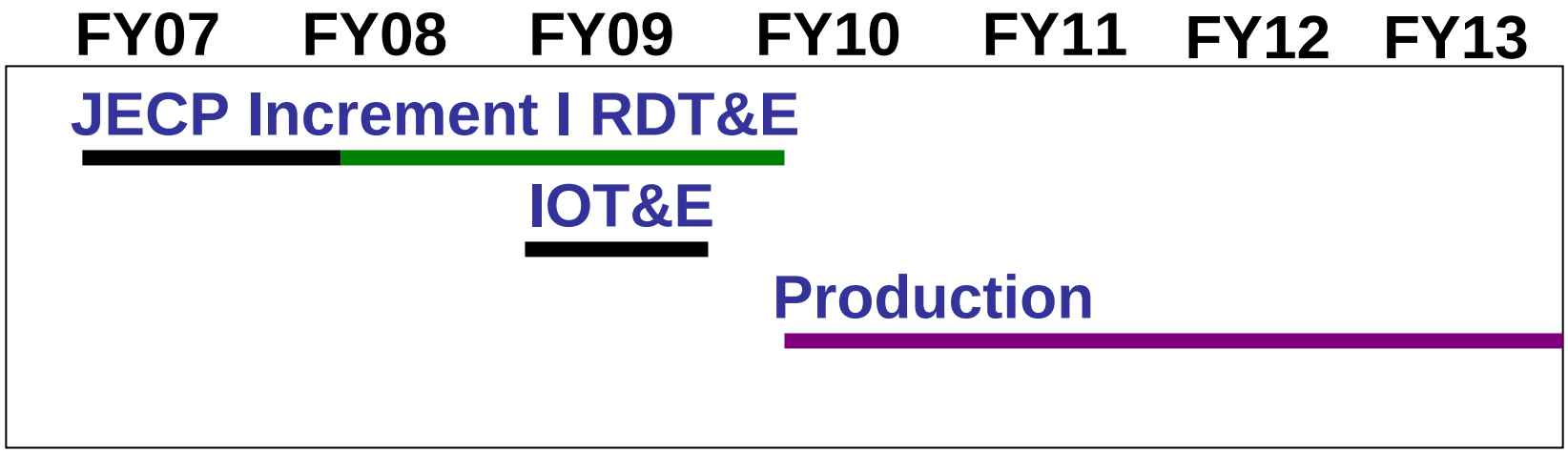


S&T Funding ($M)

YEAR/ RTDE	FY08	FY09	FY10	FY11	FY12	FY13	TOTAL FY08-13
6.2	23.0	28.4	29.3	28.1	24.9	22.8	156.5
6.3	2.9	2.9	1.9	1.9	1.9	1.9	13.6
TOTAL BUDGET	25.9	31.3	31.2	30.0	26.9	24.7	170.1

Total Protection S&T Funds (IP, CP, *and Decon for FY09* and beyond)

Program Funding & Schedule



$M	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY07-FY13
Collective Protection								
6.4	0	0	0	0	0	0	0	0
6.5	3.9	13.9	11.4	2.7	0	0	0	31.9
PROC	0	0	0	6.1	7.9	5.1	4.8	23.9

S&T Upcoming Business Opportunities

OPPORTUNITY	TIME-FRAME
CB Defense Physical Science and Technology (annual) BAA – For FY2009 New Start Projects	**December**
CB Defense Small Business Innovation Research (SBIR) –http://www.acq.osd.mil/sadbu/sbir/homepg.htm	**Mid-Nov**
Chem-Bio Defense Initiative Fund (CBDIF) – BAA	**December**

Program Upcoming Business Opportunities

PROGRAM	DESCRIPTION	YEAR
JECP	**Initial increment:** **RFP for Prime Contractor** **• Draft RFP Release March 2007**	**3QFY07**

S&T Points of Contact

- **Capability Area Project Officer for Protection (CAPO)**
  - **Dr. Charles Bass, PhD**
  - **(703) 767-3371**
  - ***charles.bass@dtra.mil***
- **Collective Protection Thrust Area Manager**
  - **Mr. William Buechter**
  - **(703) 767-3104**
  - ***william.buechter@dtra.mil***

Program Points of Contact

- **Joint Project Manager-Collective Protection**
  - **Mr. Stanley A. Enatsky, P.E.**
  - **(202) 781-3741**
  - ***stanley.enatsky@navy.mil***
  - ***stan.enatsky@jpeocbd.osd.mil***

- **Deputy Joint Project Manager-Collective Protection**
  - **Mr. Mike Abaie**
  - **(540) 653-2719**
  - ***michael.abaie@navy.mil***

Program Product Director Points of Contact

- **Mobile Collective Protection Systems**
  - **Mr. Jorge Christian**
  - **(410) 436-5512**
  - ***jorge.christian@us.army.mil***
- **Shipboard Collective Protection Systems**
  - **Mr. Richard “Chip” Warder**
  - **(540) 653-0411**
  - ***richard.warder@navy.mil***
- **Fixed Collective Protection Systems**
  - **Mr. Walt Dzula**
  - **(540) 653-5266**
  - ***walter.dzula@navy.mil***