

CHEM-BIO DEFENSE



Vol. 9 No. 1

WHOLE-OF-GOVERNMENT

A Comprehensive Approach to Global CBRN Solutions

One Portfolio: Two Missions
The Department of Defense and The Department of Health and Human Services Partner to Provide Protection

Partner Profile:
The Defense Threat Reduction Agency

Aberdeen Proving Ground: Edgewood Team CBRNE

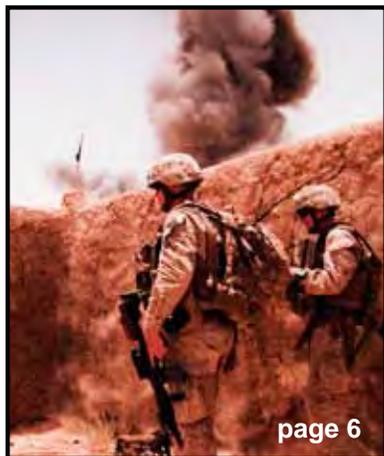


Front Cover: The National Security Strategy notes that a whole-of-government approach is pivotal to strengthening national capacity and supports providing our service members with the resources they need to succeed. The JPEO-CBD works with intra- and inter-agency partners in a whole-of-government approach to accomplish its mission of providing research, development, acquisition fielding and life-cycle support of chemical, biological, radiological and nuclear defense equipment, medical countermeasures and installation and force protection integrated capabilities supporting the national strategies.

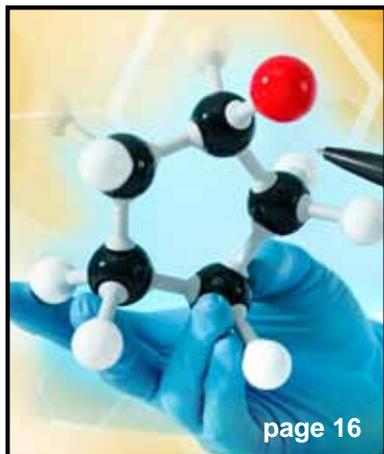


Brigadier General Jess A. Scarbrough (left), Joint Program Executive Officer for Chemical and Biological Defense, and Mr. Mark S. Borkowski (right), Assistant Commissioner, U.S. Customs and Border Protection, Office of Technology Innovation and Acquisition, signed a memorandum of agreement on August 20, 2012, to transfer and re-purpose Department of Defense systems and capabilities. The JPEO-CBD routinely partners with other Federal agencies, industry, and academia in support of the Warfighter and the Homeland.

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The Editor's Desk

The Department of Defense (DoD) and the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) experienced recent budget cuts that have encouraged us to dig deeper and find greater efficiencies within our daily operations. This has not, however, decreased our commitment to CBRN defense. The JPEO-CBD remains focused on achieving a structured, executable, and integrated medical and non-medical joint CBRN program that is balanced to address both national and joint services highest priorities. We have restructured our organization to better align our core competencies and programs. We continue to work closely with other organizations to prevent duplication of efforts and to enhance, where appropriate, programs of mutual benefit. We are continually looking through the lens of affordability and remain committed to establishing the optimal balance between the near-term requirement to provide modernized equipment to the field and the need to protect and replenish our far-term investment in technologies.



Cicely Levingston

The whole-of-government approach is at the heart of how the JPEO-CBD does business and calls for integrated government agency participation to ensure national security. The pages that follow profile just how the JPEO-CBD's seven joint project managers work with Federal, state, and local governments as well as the private sector, non-governmental organizations, academia, and international partners to get the job done. We ensure a close relationship with Federal entities such as the Department of Health and Human Services (page 6) and the Defense Threat Reduction Agency (page 16). The completion of the JPEO-CBD's relocation to Aberdeen Proving Ground set the stage for the organization to join a community consisting of partners dedicated to preserving America's technological edge and contributing to the designation of Aberdeen Proving Ground as a premier National resource in Combating Weapons of Mass Destruction (page 18). Such efforts could not be accomplished without the hard work and dedication exhibited daily by the world-class team of over 1000 men and women who comprise our organization (page 14).

Enjoy this edition of the Chem-Bio Defense magazine. Our intent is to present relevant information regarding the development and acquisition of CBRN countermeasures in a fashion that is easily understandable yet informative and entertaining. Let me know how we're doing. Your feedback is always welcome!

Best regards,

Cicely R. Levingston
Editor

THE NON-TRADITIONAL AGENT TRAIL BOSS: A HOLISTIC APPROACH TO THE MISSION

By: Jennifer Brown, Program Analyst, JPM-Nuclear, Biological, Chemical Contamination Avoidance

The Office of the Secretary of Defense designated Non-Traditional Agent (NTA) defense within the Chemical and Biological Defense Program as a special interest program in April, 2009. The Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) responded to this designation by creating a function for central coordination and tracking of NTA defense as well as other special interest programs spanning not only the Department of Defense (DoD) but interagency and international interests as well. This

(JPM-NBC CA). This Trail Boss has been in place since 2009 with the following goals: 1) serve as the JPEO-CBD focal point for capability development for NTAs, 2) lead strategy development, 3) monitor the execution of NTA programs and projects in the JPEO-CBD's portfolio, and 4) coordinate interagency and international NTA activities. Additionally, the NTA Trail Boss builds partnerships for the integration of technology, builds consensus for major governance and acquisition decisions, is responsible for horizontal integration across the enterprise, and engages external partners for a whole-of-government approach.

The JPM-NBC CA chartered a Product Director for Combating Advanced Threats to help accomplish its Trail Boss initiatives. This role is now known as the Product Director for Cross-Commodity Advanced Threats and Test Infrastructure (PD CCAT&TI). The PD CCAT&TI's first task was to rapidly field an advanced threat capability to four chemical companies within the 20th Support Command (CBRNE), an Army organization that integrates, coordinates, deploys, and provides trained and ready CBRNE forces. This endeavor involved coordination and integration across many government agencies, to include, but not limited to, the Office of the Secretary of Defense, Joint Science and Technology Office, U.S. Army Training and Doctrine Command, U.S. Army Test and Evaluation Command, U.S. Army Public Health Command, and Edgewood Chemical Biological Center. Accomplishing this mission included testing systems, updating doctrine and operating procedures, training soldiers, and verifying the safety of the items that would provide the required advanced threat capability. The collaboration among all involved occurred in a short timeframe to ensure the first chemical company was equipped in less than 12 months from the start date of the project. The success of this fielding also led to the White House National Security Staff's recommendation that a similar advanced threat capability package be developed and fielded to

the National Guard Bureau Civil Support Teams. The rapid initiatives in support of the 20th Support Command (CBRNE) and the National Guard Bureau Civil Support Teams demonstrated the ability of various Federal agencies to collaborate while verifying the need for a whole-of-government approach to ensure the best capabilities are reach the Warfighter and first responders.

Another initiative of the NTA Trail Boss is the NTA Deep Dive. This summit includes participants from Federal agencies and international allies and is typically held quarterly. The goal of each NTA Deep Dive Summit is to facilitate the sharing of information, the filling of knowledge and capability gaps, and the coordinating of long-term strategies and plans where unity of purpose and effort exist. Representatives from the White House, DoD, Department of Homeland Security, Federal Bureau of Investigation, Food and Drug Administration, Environmental Protection Agency, Joint Science and Technology Office, and Defence Science & Technology Laboratory (United Kingdom), among many other organizations and agencies, participate in the NTA Deep Dive Summits. The Summits use the items that were rapidly fielded to the 20th Support Command (CBRNE) chemical companies as the capability baseline and serve as a forum for the NTA Community to discuss the NTA threat, prioritize gaps, and determine needs with the goal of bringing these important issues to the attention of decision-makers. The NTA Deep Dive Summits are opportunities for member agencies and organizations to understand how other members of the NTA Community function, where the interdependencies are, and how knowledge and capabilities can be leveraged and shared.

The NTA Trail Boss is a unique position within the DoD. Not only does it coordinate efforts and track projects across the JPMs, but it reaches interagency and international organizations as well to capture the big picture of NTA Defense. This role truly demonstrates that while one office may be tasked with something, it never stands alone to accomplish the mission.



Photo Courtesy of 20th Support Command (CBRNE)

The highly-skilled Nuclear Disablement Teams of the 20th Support Command (CBRNE) traveled to Aiken S.C. to participate in the Able Palmetto exercise at Savannah River Site.

function, known as a Trail Boss, was incorporated across the JPEO-CBD for Integrated Base Defense, Biosurveillance, Information Management/Information Technology, Major Defense Acquisition Program, and NTAs.

The JPEO-CBD's NTA Trail Boss is located within the Joint Program Management Office for Nuclear, Biological, Chemical Contamination Avoidance

One Portfolio: Two Missions

The Department of Defense and The Department of Health and Human Services Partner to Provide Protection

By: Ms. Kristin Stassi, Associate, Booz Allen Hamilton

The National Security Strategy makes it clear that a “whole-of-government” approach is pivotal to strengthening national capacity and supports providing our service members with the resources they need to succeed.

The Joint Project Management Office for Chemical Biological Medical Systems (JPM-CBMS) supports this whole-of-government approach by collaborating with multiple government organizations and academic institutions to increase budgetary efficiencies and support the Warfighter. Even when our visions differ, missions often overlap, creating opportunities to unite with these partners in ways that support organizational goals and achieve mission success.

About JPM-CBMS:

The JPM-CBMS is responsible for research, development, acquisition, fielding, and life-cycle management of U.S. Food and Drug Administration (FDA)-approved medical systems for protection, diagnostic, and treatment capabilities against chemical, biological, radiological, and nuclear (CBRN) warfare threat agents. The JPM-CBMS is composed of a headquarters and three Joint Product Management Offices: The Joint Vaccine Acquisition Program (CBMS-JVAP), the Medical

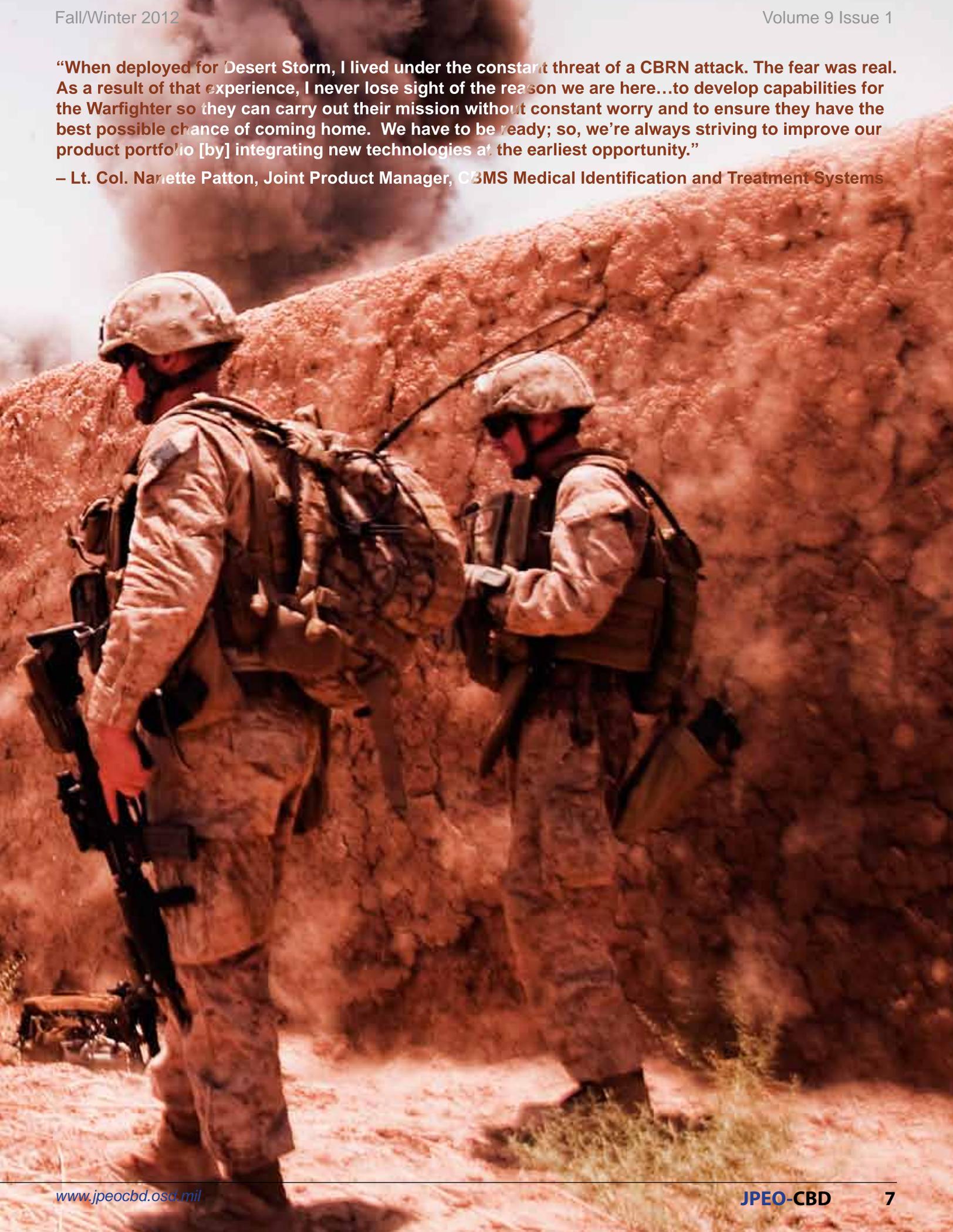
Identification and Treatment Systems (CBMS-MITS), and Biosurveillance (provisional) (CBMS-BSV).

The CBMS-JVAP develops, produces, and stockpiles FDA-licensed vaccine systems to protect the Warfighter against biological agents and consolidates the Department of Defense’s (DoD) efforts for advanced development, testing, FDA licensing, production, and storage of biological defense vaccines. The CBMS-



“When deployed for Desert Storm, I lived under the constant threat of a CBRN attack. The fear was real. As a result of that experience, I never lose sight of the reason we are here...to develop capabilities for the Warfighter so they can carry out their mission without constant worry and to ensure they have the best possible chance of coming home. We have to be ready; so, we’re always striving to improve our product portfolio [by] integrating new technologies at the earliest opportunity.”

– Lt. Col. Nanette Patton, Joint Product Manager, CBMS Medical Identification and Treatment Systems



BSV develops and integrates state-of-the-art CBRN technologies to enable early warning, identification, and situational awareness of biological threats to U.S. forces. This is a key component of JPM-CBMS' efforts because early warning could facilitate pre-symptomatic treatment for the Warfighter. Treating Warfighters is another area of focus for JPM-CBMS in the CBMS-MITS Joint Product Management Office. Led by Joint Product Manager Lieutenant Colonel Nanette Patton, CBMS-MITS provides the Warfighter and Homeland with robust, affordable FDA-approved lifesaving medical countermeasure drug capabilities against CBRN threats. The CBMS-MITS serves as the life-cycle product manager for several fielded products and places focus on developing new products to support the Warfighter.

CBMS-MITS: Driving Forward Through Collaboration

Driven by a passion to support the Warfighter with new and improved technologies, Lt. Col. Patton has a clear path forward for CBMS-MITS.

“When deployed for Desert Storm, I lived under the constant threat of a CBRN attack. The fear was real. As a result of that experience, I never lose sight of the reason we are here...to develop capabilities for the Warfighter so they can carry out their mission without constant worry and to ensure they have the best possible chance of coming home. We have to be ready; so, we're always striving to improve our product portfolio [by] integrating new technologies at the earliest opportunity.” – Lt. Col. Nanette Patton, CBMS-MITS Joint Product Manager

One way CBMS-MITS strives to improve its product portfolio is through collaboration efforts with the U.S. Department of Health and Human Services (HHS) Biomedical Advanced Research and Development Authority (BARDA). The CBMS-MITS and BARDA partner on multiple projects that benefit both the Warfighter and Homeland. This collaboration exemplifies how two different organizations within separate Departments of the Federal government can successfully support each other in areas where missions overlap. While CBMS-MITS supports the Warfighter, BARDA is focused on public health medical emergencies for

the general civilian population. Despite these differences, both organizations find successful ways to share data and resources in support of moving their individual programs forward in efficient ways.

Medical Radiation Countermeasures

One CBMS-MITS product line that is in advanced development is Medical Radiation Countermeasures (MRADC). Upon completion, these products will be FDA-approved to prevent, diagnose, and treat Acute Radiation Syndrome caused by exposure to ionizing radiation. These countermeasures will shield and sustain the Joint Force over the long term and at near normal levels of effectiveness while in a contaminated environment.



The JPM-CBMS is not taking on this important work alone. In partnership with BARDA, MRADC investments are targeted toward facilitating a Strategic National Medical Radiation Countermeasures Portfolio. The DoD supplements HHS/BARDA investments to test Warfighter requirements while leveraging HHS/BARDA investments in the MRADC mission space.

Additionally, the CBMS-MITS product manager for MRADC works part-time at BARDA to directly engage with the BARDA team throughout the advanced development process. This engagement demonstrates JPM-CBMS' commitment to ensuring transparency, flow of communications, teamwork, collaboration, and mission support. In addition to this direct staffing support, JPM-CBMS also supports the development of MRADC by incorporating Warfighter requirements into BARDA's scope of work, providing funding support, and contributing extensive experience with logistics and DoD advanced development processes into the overall MRADC development plan.

Inhalation Atropine

The CBMS-MITS advanced development efforts also include Inhalation Atropine (IA), a treatment for Warfighters experiencing symptoms of nerve agent poisoning. In another example of whole-of-government approach and collaboration, JPM-CBMS and BARDA signed a data transition memorandum. This memorandum grants BARDA access to important IA research data. BARDA will evaluate this data upon receipt and consider funding the IA program. In turn, JPM-CBMS will participate on BARDA's Integrated Product Teams throughout the development of the product, ensuring the development of a robust treatment that satisfies the requirements of both the Warfighter and the general U.S. population.

This data transition memorandum approval is paramount to a successful IA product development partnership because it increases the possibility of continued development of this capability and delivery of a product both agencies can use. This partnership also demonstrates JPM-CBMS' focus on doing what it takes to make this product program a success.

RAMPART Study

Another example of how JPM-CBMS partners with HHS is the Rapid Anticonvulsant Medication Prior to Arrival Trial (RAMPART) Study. The RAMPART Study was one in which investigators compared two drugs known to be effective in controlling seizures: midazolam and lorazepam. The CBMS-MITS was interested in the results of this study to support its own advanced development program for Advanced Anticonvulsant System (AAS), a midazolam autoinjector to treat seizures and prevent subsequent neurological damage caused by exposure to nerve agents.

This collaborative effort was forged through CBMS-MITS' creation of a Memorandum of Agreement (MOA) with the National Institute of Neurological Disorders and Stroke. In this MOA, CBMS-MITS received the data from the study results, and in turn, CBMS-MITS provided the autoinjectors for the trial.

The CBMS-MITS received the full RAMPART data set in February 2012. Receipt of this data is a critical factor in moving forward with the AAS advanced development process, including assembling the data set to support the submission of a New Drug Application to the FDA for approval.

What's Next

The CBMS-MITS continues to collaborate with other Federal agencies in support of products in the advanced development phase. In addition to the MRADC, IA, and AAS products mentioned above, CBMS-MITS is also focused on advanced development efforts for Bioscavenger that will provide protection against exposure to multiple types of nerve agents and improved field capabilities. The CBMS-MITS is coordinating with other government organizations to document possible concepts of use for this product.

Looking forward, all product offices within JPM-CBMS will continue to evolve by partnering and collaborating with interagency, intra-agency, industry, and international/allied countries with a focus on unity of purpose and effort in support of protecting our Warfighters and Nation against a variety of CBRN threats. 

Communication is Key in Whole-of-Government Approach

By: Margaret Sobey, Chief, Interagency & International Division, JPEO-CBD HQ

Our nation constantly faces daunting challenges in the area of Chemical, Biological, Radiological, and Nuclear (CBRN) defense. The stakes have never been higher than they are today for our service members actively engaged in combat operations. Our troops face evolving enemies who use asymmetric tactics to characterize the war on terrorism. In the face of these challenges, the U.S. Warfighter, our nation, and our world continue to rely and depend upon the success of the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD). Combatting CBRN threats require extraordinary attention and the implementation of innovative tactics, techniques, and procedures. Additionally, budgets are constrained and resources are reduced. Still the task of thwarting the enemy remains. The JPEO-CBD must work smarter by maximizing the relationships and partnerships currently held within the interagency and international CBRN countermeasure community. These relationships are not born out of convenience but out of operational and programmatic necessity.

The understanding and articulation of key or strategic relationships is an important consideration for the success of the JPEO's mission. In this regard, one must first understand the context and appropriate use of terms that, on the surface, seem identical. However, this isn't the case. While there are certain incentives for sharing technologies and solutions within the fields of CBRN, emergency response, and Command, Control, Computers, Communication, Intelligence and Information (C4I2) emergency management systems, many distinctions remain for a variety of reasons. Clarification of definitions helps improve communication at all levels and establish a common lexicon. Figure 1 is an excellent example:

With these terms fully understood, one can set to the tasks of building, enhancing, and leveraging relationships across the interagency and internationally. Each term, when properly used, can help serve as the basis for doing more with fewer resources simply because the conditions for sharing technologies, approaches, and methods are explained up front in clear and unambiguous terms. Motives and outcomes are better defined, traceable, and measured against

planned or ongoing investments resulting in a better understanding of where we are in evaluating and making resource decisions.

Another important aspect of interagency and international collaboration is the ability to segment and complement efforts. A case in point is JPEO-CBD involvement in the Inter-Agency Board (IAB). This is a collaborative body of emergency management, first response, law enforcement, public health, and other organizations from within the Federal government, academia, and industry with the stated purpose of sharing best practices, lessons learned, and new methods. Applicability and utility of topics presented at scheduled events raise the level of awareness while at the same time respecting and acknowledging the unique missions and needs of all who participate. The IAB is not a governing body seeking proscriptive outcomes; rather, it seeks to provide a forum where ideas and solutions can be discussed and provided where needed. The benefit this type of organization provides is the capability



Figure 1: Clarification of definitions helps improve communication at all levels.



Figure 2: The JPEO-CBD regularly collaborates with the following federal agencies and has leveraged over \$45M in non-DoD funding toward countering the CBRN threat.

to influence and guide advances in technology, policy, and the integration of both.

So why is this important to what the JPEO-CBD does in its day-to-day operations? Part of the answer lies in leveraging new and innovative approaches that reduce development and sustainment costs. Another is to support and enable others to adopt and use the solutions developed within the JPEO-CBD; this is a simple matter of give and take within a fiscally constrained environment. If the JPEO-CBD can better understand and articulate technology sharing, where it makes sense to do so, then others from across the interagency and international lines would leverage and use solutions provided. In order to make our international and interagency coordination successful, we must understand, and be able to confront, the sometimes significant institutional, sociological, capability, capacity, and legal challenges to the international and interagency teaming process. Lastly, the JPEO-CBD can better position itself as a leader throughout the interagency and in international arenas by seeking opportunities where it can influence and guide the future of CBRN defensive capabilities. It is critically important to provide a comprehensive response to existing and evolving CBRN global threats. We therefore continue to strive to broaden the JPEO-CBD's interagency and international collaboration and outreach to leverage resources (people, time, and funding) across the Enterprise.

These activities provide a more robust and integrated portfolio for the advanced development and life cycle management of CBRN systems.

Our organization is under a considerable amount of pressure to succeed and the terms have not become easier. We cannot act alone nor will we act alone; our strategic vision and mission requires we partner and lead a host of integrated efforts to thwart the entire spectrum of CBRN medical, non-medical, and force protection threats. Our resources are smaller and the expectations remain high. However, we can and will succeed if we pay attention to building, sharing, and leveraging relationships across the interagency and with our international partners. Burden sharing is one aspect; but, more importantly, establishing and nurturing meaningful relationships based on commonly accepted terms (and terminology) are key not only to our continued presence but also in some cases, our very survival. The JPEO-CBD, with its wealth of experience, skills, and thought leaders, is centrally positioned to assist the Nation in anticipating and mitigating these threats. We will provide the most collaborative and integrated CBRN medical, non-medical and force protection capabilities to the whole-of-government and our Nation to help shape the Nation's responses to our most pressing CBRN medical, non-medical, and force projection threats.

ABLE RESPONSE | 2012

By: Valentin Novikov, Acting Chief, Emerging Concepts & Architectures, JPEO-CBD HQ

Biological terrorism incidents, regardless of their source, can have catastrophic effects not only on military operations but also civilian populations and our economy in and around the contaminated areas. As a result, rapid responses that take prior planning and coordinated efforts are critical to minimize the potential effects of a biological incident. Furthermore, these types of incidents can be extensive since infected areas cannot necessarily be contained by fence lines on military installations. Such an event within the United States near or on a military installation typically requires coordinated interagency responses in accordance with the National Incident Management System that was established in 2004 at the direction of Homeland Security Presidential Directive – 5, “Management of Domestic Incidents.”

Unfortunately, the possibility of biological terrorism threats are not just limited to the United States; they

could occur within the borders of an allied nation and still have a significant U.S. military and military dependent presence. This type of situation, like a plausible biological terrorism incident in South Korea that could simultaneously affect both a Korean civilian community and a US military installation, will be extremely complex. It will require a rapid collaborative whole-of-government bilateral response to effectively save U.S. and Korean lives and to mitigate the economic and military operational impacts caused by such an insidious event. For responses to a bilateral bioterrorism incident to be both rapid and effective, it will require collaborative preparation and rehearsals of allied partner nations before such an incident occurs.

The Able Response 2012 is a collaborative interagency effort. The 2012 event was conducted from May 15-18 to provide U.S. and Republic of Korea (ROK) senior officials with an opportunity to prepare for such an incident. The purpose of the exercise

was to examine bilateral policies and interactions during a biological incident, and to engage in a strategic dialogue about combined capabilities, information sharing, and response to bioterrorism. The exercise was designed to: “Improve U.S./ROK partnership’s ability to prepare for and respond to a naturally occurring or intentional biological incident by employing a ‘whole of government’ approach through bilateral cooperative engagements,” “strengthen interagency aspects of the U.S. /ROK alliance through interoperability training,” and build an exportable framework to facilitate regional biosurveillance.” The AR12 exercise was built upon the successes of the 2011 exercise which was the first bilateral, interagency U.S./ROK biological response exercise.

The Able Response 2012 exercise was hosted by the Korea Institute for Defense Analyses in Seoul, South Korea. Over 265 exercise participants from 28 ROK and 29 U.S. agencies



ABLE RESPONSE 2012 Participants



Republic of Korea and U.S. Senior Leader Discussions

participated in the event.

The 2012 exercise included an enhanced vignette driven three-day Table Top Exercise (TTX) that examined bilateral responses in the areas of epidemiological surveillance and investigation, medical, and public health response, information sharing

and strategic communications, and bilateral cooperation. Observations noted during the exercise resulted in the identification of recommendations that will improve various aspects of future bilateral interagency response to a biological terror event on the Korean Peninsula.

This year's exercise demonstrated significant progress since the initial Able Response exercise in 2011. It provided the U.S./ROK alliance an integrated approach to detect and identify biological hazards, treat affected personnel, identify possible materiel and non-materiel requirements leading to future bilateral project agreements, and enhance bilateral interagency coordination in response to biological terrorism incident. The exercise enabled senior ROK and U.S. military and civilian leaders to examine the challenges and decisions they would face following simulated biological incidents based upon key observations from the TTX. The Able Response series of exercises fostered increased interagency collaboration between the ROK and U.S. in mitigating common weapons of mass destruction threats on the Korean Peninsula. Able Response 2012 has become a benchmark for building partnership capacity and strengthening the alliance between the Republic of Korea and the United States and has become the standard for exploring biological defense response capabilities among other partner nations during future exercises.



ABLE RESPONSE 2012 Senior Leader Seminar

words
from
the

Wise:



Master Sgt. Aki Paylor

Meet the New JPEO-CBD Senior Enlisted Adviser

By: Cicely Levingston, Chief, Strategic Plans & Communications, JPEO-CBD HQ

Master Sergeant Aki Paylor joined the JPEO-CBD team in July 2012 as the Senior Enlisted Advisor to the Joint Program Executive Officer (JPEO) for Chemical and Biological Defense. Master Sgt. Paylor brings a unique perspective to the JPEO-CBD's mission of providing the best Chemical Biological Radiological and Nuclear (CBRN) defense technology, equipment, and medical countermeasures to U.S. service members.

Paylor comes to the JPEO-CBD after serving as the First Sergeant of Alpha Company within the 22nd Chemical Battalion located at Aberdeen Proving Ground, MD. The Baltimore native is a battle-tested soldier with 38 months of combat experience in support of Operation Desert Thunder and Operation Iraqi Freedom.

No stranger to the CBRN community, Paylor has served in seven chemical companies and held leadership positions from Squad Leader to First Sergeant. In his role as JPEO-CBD Senior Enlisted Adviser, Master Sgt. Paylor will advise and support the JPEO and joint project managers on matters such as equipment fielding, surveillance, and military personnel.



What are your top 3 priorities as the JPEO's Senior Enlisted Advisor?

Working with the quality team of professionals within the JPEO will allow me to put my 19 years of active duty military experience to great use. Serving within a program office will certainly expand my breadth of knowledge.

My key focus areas will include matters that directly affect the Warfighter, like the implementation of the JPEO's Enterprise Fielding and Surveillance (JEFS) Directorate. I will work to help create tangible efficiencies by establishing a single entry point for all enterprise fielding and surveillance initiatives.

The foundation of any organization is its people. I will work closely with the JPEO to grow our joint military presence throughout the Enterprise. This will help us [the JPEO-CBD] more readily meet the CBRN countermeasure needs of each branch of service.

I know that the JPEO can't be multiple places at one time; so, it is my job to be his ear to the ground and assist with communication efforts. In that spirit, I will do whatever necessary to support the JPMs with internal messaging within the JPEO-CBD and work to ensure we communicate efficiently overall.



How have your past assignments and experiences prepared you for your current role as Senior Enlisted Advisor to the Joint Program Executive Officer for Chemical and Biological Defense?

I am a seasoned Warfighter and, as such, I understand that "I am only as good as my equipment and the training that comes with it." While performing duties in combat, I was always able to remain confident knowing that I was a part of the best fighting force in the world and that folks like those within the JPEO had equipped me and my team with the best equipment in the world. I will make it my personal objective to ensure the same for the Joint Warfighters of the future. Honesty, commitment, and character form the foundation on which I operate in both my personal and professional lives. I will bring these core values with me as I join the JPEO

team in delivering state-of-the-art technology that will support our Warfighters and homeland for decades to come.

As the Senior Enlisted Advisor within a Joint Program Executive Office that provides CBRN defense equipment and medical countermeasures to service members, how will you maintain direct contact with and receive feedback from service members in each branch of the armed forces?

The name of our organization says it all. We are a JOINT Program Executive Office. For me, that means I will not focus on service specific matters; rather, I will work closely with the senior Non-Commissioned Officers (NCOIC) within each service to consistently share information and impressions with one another. Our focus is the service member. As long as we keep that in the forefront of all we do, it truly is a win-win for all.

What is your experience with JPEO-CBD products? Have you had any interesting scenarios or situations involving JPEO-CBD products that you would like to share?

While serving as a user during the Pre-Planned Product Improvement Biological Integrated Detection System New Equipment Training/Limited User Test (LUT), I was afforded the opportunity to see the defense acquisition process work first. During the LUT, other users and I made daily recommendations during hot wash sessions and meetings with program representatives. Several years later, I was a member of a unit that received final product. It was evident that many of the recommendations made during the LUT had been addressed. This was a clear representation of the dedication of all the offices involved to ensure the best product was delivered to the Warfighter.

I also held the position of Base Defense Operations Center Non-commissioned Officer In Charge at the Baghdad International Airport. I became familiar with all aspects of integrated base defense during this experience. This assignment was also a joint effort with Air Force Security Forces. So, I do have a bit of experience with the Joint community and one of my personal strengths is building relationships.

As the JPEO-CBD's Senior Enlisted Advisor, I will oversee the JFES directorate and use my experiences gained while serving as First Sergeant of the E/1-10 Attack Reconnaissance Battalion, a Forward Support Company. My unit's role during Operation Iraqi Freedom in 2009-2010 was to provide logistic support for all aviation assets within Multi National Division-North. While completing my Defense Acquisition University courses Acquisition 101 and Logistic 101, I realized that the role of a Multifunctional Logisticians similar to that of a Life Cycle Logisticians. I will leverage my experiences gained from performing as a Multifunctional Logisticians to assist in the implementation of the JPEO's Strategic Plan. First and foremost, the JPEO's priorities are my priorities, and the shaping of the JFES directorate will ultimately result in improved efficiencies and increased confidence from the user.

I am elated to be a part of this great organization and look forward to putting my entire skill-set to good use as a member of Team JPEO-CBD. I have hit the ground running and am 100% ready to "Let's get after it!" 



JPEO-CBD PARTNER PROFILE

The Defense Threat Reduction Agency

DTRA Chemical/Biological Technologies Directorate Mission:

To invest in transformational ideas, innovate people, and actionable technology development for Chemical Biological Defense solutions

By: Carl R. Brown Sr., CB Deputy Chief of Staff, Staff Director, Directorate Communication & Outreach, Chemical/Biological Technologies Directorate, Defense Threat Reduction Agency

The continued threat of chemical, biological, radiological and nuclear weapons remains one of the highest priorities for our national security. Within the Department of Defense, the Defense Threat Reduction Agency (DTRA), is assigned the mission of reducing the threat posed by these weapons of mass destruction (WMD).

There is legitimate cause for concern regarding development of weapons of mass destruction. North Korea has conducted nuclear tests. Syria, which is experiencing significant internal upheaval, is believed by some experts to be developing biological weapons and is thought to have an active, clandestine nuclear weapons program. There is evidence that indicates terrorist organizations, including al Qaeda, have sought to obtain and use WMD. At the same time, there are always new WMD threats emerging over the horizon. Since 2000, at least 30 new and highly infectious diseases have been identified—and these

are just the ones that we know about.

In the face of these threats, DTRA's Chemical and Biological Technologies Directorate (DTRA CB) executes the Joint Science & Technology Office (JSTO) function for the Chemical and Biological Defense Program (CBDP). DTRA CB's mission is two-fold: identify and develop new technologies to combat today's WMD threats; and, anticipate the WMD threats of tomorrow and develop ways to counter these threats before they come to bear.

To achieve this mission, DTRA CB proactively seeks and develops adaptable and flexible technologies that counter threats posed by WMD.

"As we look at new technology investments, we are focused on putting effective, cutting-edge technologies into the hands of the warfighter to help protect lives and ensure combat readiness," said Dr. Alan S. Rudolph, director of DTRA's Chemical and Biological

Technologies directorate. As a result, DTRA CB's decisions about what technologies to invest in rely heavily on the requirements articulated by the Joint Requirements Office for Chemical, Biological, Radiological, Nuclear Defense (JRO-CBRN) and technology needs put forward by the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) to field capabilities needed for today's Warfighters.

DTRA applies a strategic approach to managing the Science and Technology (S&T) investment portfolio. Efforts are focused on actionable transition and deployment and DTRA invests in technologies that have the best potential to move from basic research to actual products that can be deployed to reduce the threat of WMD. To do this, DTRA CB pursues investments directed at strategic "thrusts" and "enablers."

Strategic Thrusts provide the pathway to achieving overarching goals of the

Strategic Thrusts



- Disease Surveillance, Threat Detection & Point of Need Diagnostics
- Adaptive Medical Countermeasures & Technologies
- Threat Activity Sensing & Reporting
- Rapid Response & Restoration Science & Technology

DTRA CB program, by filling gaps and developing new capabilities. These thrusts serve two key purposes. First, they ensure that investments are focused on the areas where we can do the most to protect and strengthen the warfighter. Second, these thrusts focus DTRA CB’s efforts on the development of fully integrated solutions and not single or unsustainable products or approaches. DTRA CB’s four strategic thrust areas are:

- Disease surveillance, Threat Detection, and point of need diagnostics
- Adaptive medical countermeasures and technologies
- Threat activity sensing and reporting
- Rapid Response and restoration science and technology

In conjunction with Thrusts, Strategic Enablers are areas of investment that are essential for building a strong foundation of knowledge upon which other technologies can be developed and translated into products and capabilities. Enablers make it possible to make deployable products that fulfill customer needs. The enablers are:

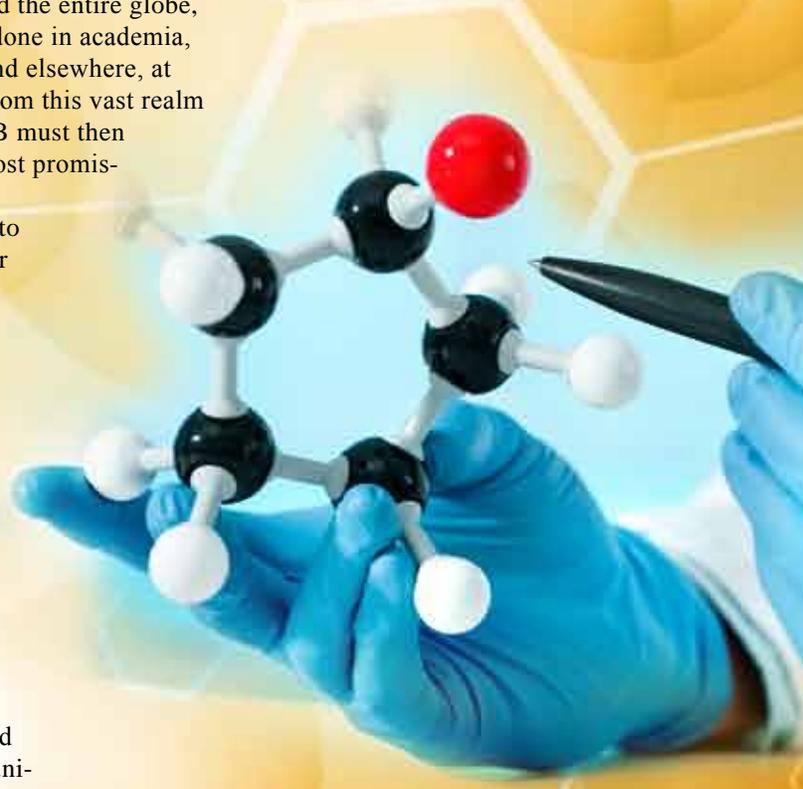
- Novel Threat Research
- Applied Math Tools
- Multi-Functional Materials
- Flexible Design and Manufacturing

- Systems Biology

Somewhere around the world today someone has begun to develop a new technology or approach that could help protect our Warfighters and the nation against WMD. To be effective, DTRA CB needs to look across the entire landscape, and around the entire globe, to see what is being done in academia, industry, DoD labs and elsewhere, at home and abroad. From this vast realm of research DTRA CB must then find and foster the most promising technologies.

In order to be able to effectively defend our country and protect our national interests, our Soldiers, Sailors, Marines, Airmen and Coast Guardsmen must be prepared to deal with any threat, especially the threat of weapons of mass destruction. DTRA CB is working tirelessly with the leading experts from the scientific and technological communities. “The Directorate’s

primary goal is to effectively take these weapons out of the quivers of those who would do our nation harm. Every threat we counter with a new technology or capability, is one less thing that our Warfighters and our national leaders need to worry about,” said Rudolph.





ABERDEEN PROVING GROUND: EDGEWOOD TEAM CBRNE

The Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) has a presence of over 540 personnel on the Edgewood Area of Aberdeen Proving Ground. The completion of the JPEO-CBD's relocation from Falls Church, Virginia in 2011 under the 2005 Base Realignment and Closure law set the stage for the organization to join a community consisting of partners dedicated to preserving America's technological edge and contributing to the designation of Aberdeen Proving Ground as a premier National resource in Combating Weapons of Mass Destruction (CWMD). Aberdeen Proving Ground's "Team CBRNE" [Chemical, Biological, Radiological, Nuclear, Explosives] provides National CWMD contributions through a highly skilled workforce with expertise in Research and Technology, Systems Development, Test and Evaluation, and Field Operations. The Team also works together to foster partnerships with local and national industry as well as regional academia at all levels.

Team CBRNE's foundation is the synergy inherent in having multiple CWMD elements with complimentary portfolios co-located on one installation.

The U.S. Army Medical Research

Institute of Chemical Defense (USAMRICD) and the U.S. Army Edgewood Chemical Biological Center (ECBC) execute science and technology programs critical to advancing the maturity of specific technologies to the level at which the JPEO-CBD, augmented by ECBC, refines and then fields actual chemical and biological defense capabilities to the CBRNE Soldier, such as

Assembled Chemical Weapons Alternatives (ACWA) missions include the safe handling and destruction of chemical weapons - capabilities that are particularly important for the Nation in a post-9/11 environment. As an entity, Team CBRNE reflects the President's Whole-of-Government approach to CWMD. The Team CBRNE approach consists of bringing all appropriate resources to

"The JPEO-CBD headquarters completed its relocation from our Falls Church, VA offices to the Edgewood Area of Aberdeen Proving Ground in September 2011. This move created a true 'CBRNE Center of Excellence' for the DoD. We are now co-located with other DoD organizations that provide CBRNE capability to the Warfighter. This successful BRAC-mandated move highlighted the resilient and agile workforce within the JPEO-CBD that is capable of adapting to the needs of the nation and our stakeholders."

Brig. Gen. Jess A. Scarbrough
Joint Program Executive Officer, Chemical and Biological Defense

those within the 20th Support Command (CBRNE).

The U.S. Army Public Health Command is responsible for the health surveillance and emergency response preparedness of all Soldiers, while the U.S. Army Chemical Materials Agency (CMA) and U.S. Army Element,

bear to meet a specific challenge or satisfy a requirement in collaboration with agencies and offices internal, as noted above, or external to the Aberdeen Proving Ground (Edgewood Area).

Secretary of Defense Leon Panetta's new strategic guidance, Sustaining U.S. Global Leadership: Priorities for 21st

Century Defense, released January 5, 2012, states the following regarding CWMD: "In partnership with other elements of the U.S. Government, DoD will continue to invest in capabilities to detect, protect against, and respond to WMD use, should preventive measures fail." Team CBRNE epitomizes this partnership, regularly collaborating both internally to Aberdeen Proving Ground (Edgewood Area) and externally with other DoD organizations and Federal agencies throughout the nation and abroad.

The 20th Support Command (CBRNE) maintains technical links with appropriate Joint, Army, Federal, and State CBRNE assets, as well as the research, development, and technical communities to assure Army CBRNE response readiness. Additionally the 20th Supt Command has a standing network of relationships to call upon for immediate reach assistance within the DoD, other federal agencies, and academia.

The USAMRICD's national and international customer base has grown so significantly that the Institute has established an Office of Consultative Services to facilitate interaction with other government agencies, academia, pharmaceutical companies, and commercial enterprises. Serving both the DoD and federal law enforcement communities, ECBC's Sample Receipt Facility is the first multi-agency funded project at Aberdeen Proving Ground — with the Army, the Federal Bureau of Investigation and Department of Homeland Security — all contributing to the construction funds. The facility promotes synergy as the only entity that can safely receive and analyze unknowns coming from anywhere in the world, including military theaters of operation, intelligence organizations and law enforcement agencies. Meanwhile, to accomplish their missions of securing and destroying chemical agent materiel, by necessity CMA and ACWA work with the Department of State, Centers for Disease Control and Prevention, and U.S. Environmental Protection Agency. Through the management of its epidemiology and disease surveillance portfolio, the USAPHC cooperates with other DoD entities and federal agencies to maximize protection of combat readiness and Soldier health.

The Defense Threat Reduction Agency (DTRA) is the DoD's official



Aberdeen Proving Ground's Edgewood: Team CBRNE held a Capabilities Showcase in 2011 and 2012 to educate and inform key stakeholders while strengthening partnerships among the team members.



Edgewood: Team CBRNE's foundation is the synergy inherent in having multiple CWMD elements with complimentary portfolios co-located on one installation.

Combat Support Agency for countering weapons of mass destruction, and the organization addresses the entire spectrum of CBRNE threats. DTRA's programs include basic science research and development, operational support to U.S. Warfighters on the front line, and

an in-house WMD think tank that aims to anticipate and mitigate future threats long before they have a chance to harm the United States and our allies. 

EDGEWOOD: TEAM CBRNE

Defense Threat Reduction Agency (DTRA) - Chemical/Biological Technologies Directorate



Mission:

Integrate lifecycle science, engineering and operations solutions to counter CB threats to U.S. forces and the nation

Vision:

To be the premier resource for chemical, biological, radiological, nuclear and explosives solutions, uniting and informing the national defense community

U.S. Army Edgewood Chemical Biological Center (ECBC)



Mission:

Integrate lifecycle science, engineering and operations solutions to counter CB threats to U.S. forces and the nation

Vision:

To be the premier resource for chemical, biological, radiological, nuclear and explosives solutions, uniting and informing the national defense community

U.S. Army Element, Assembled Chemical Weapons Alternatives (ACWA)



Mission:

The safe and environmentally sound destruction of the chemical weapons stockpiles stored at the Blue Grass Army Depot, Kentucky, and the U.S. Army Pueblo Chemical Depot, Colorado

Vision:

To contribute to the national goal of safely eliminating the chemical weapons stockpiles in Colorado and Kentucky

U.S. Army Public Health Command (USAPHC)



Mission:

Promote health and prevent disease, injury, and disability of Soldiers and military retirees, their Families, and Department of the Army civilian employees; and assure effective execution of full spectrum veterinary service for Army and Department of Defense Veterinary missions

Vision:

World-class provider of public health services across DA and DoD



The Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD)

Mission:

Provide Research, Development, Acquisition Fielding and Life-Cycle Support of Chemical, Biological, Radiological and Nuclear Defense Equipment, Medical Countermeasures and Installation and Force Protection Integrated Capabilities Supporting the National Strategies

Vision:

An Agile, Results-Oriented, and Transformational Acquisition Enterprise Delivering Net-Centric, Modular, Tailorable and Multi-Purpose Capabilities to the Nation

U.S. Army Chemical Materials Agency (CMA)

Mission:

Create a safer tomorrow by making chemical weapons history

Vision:

Enhance national security by storing and ultimately eliminating US chemical warfare materiel (CWM), and supporting CWM responses



The 20th Support Command (CBRNE)

Mission:

Provide trained and ready forces in order to combat CBRN and Explosive Ordnance threats and hazards in support of the operational force and national combating WMD objectives

On order, deploy, conduct mission command for Army and/or joint specialized CBRN and EOD forces, execute WMD-E operations, and other specialized CBRNE operations, and provide technical capabilities and CBRNE subject matter expertise to Joint and Army Commanders to achieve national combating WMD objectives.

Vision:

To provide highly trained, properly equipped, disciplined and well led forces with unique capabilities to combat CBRN and Explosive Ordnance threats and hazards for our Nation; our concise strategic communication message is: "Combating CBRN and Explosive Ordnance threats and hazards for our Nation"



U.S. Army Medical Research Institute of Chemical Defense (USAMRICD)

Mission:

To discover and develop medical countermeasures to chemical warfare agents for US military and US citizens; to train and educate personnel in the medical management of chemical casualties; and to provide subject matter expertise in developing Defense and National policy and in proper crisis management

Vision:

To be the recognized Center of Excellence, the national asset, and the world leader for medical chemical defense research, education, and training



New Fermenters Boost Biological Agent Defense

By: Al Vogel, Public Affairs Specialist, Dugway Proving Ground



Photo by: Al Vogel

Arthur Schwedler, a microbiologist overseeing the fermenters, displays a 2.8-liter flask in which a bacterial simulant is started. Behind him is the 1,500-liter fermenter that can produce up to 1,000 liters of simulant. In the past, microbiologists required at least four weeks to produce 1,000 liters of simulant in batches using a 150-liter fermenter. Today, the simulant can be made in a week as one batch.

The Life Sciences Division at the U.S. Army Test and Evaluation Center's West Desert Test Center added three large-capacity fermenters to markedly increase its ability to grow benign microorganisms that simulate biological agents. These simulants are used to test defense systems at Dugway Proving Ground, such as detectors and decontaminators, for protection against actual biological agents.

The fermenters are 1,500 liters (396 gallons), 200 liters (53 gallons), and 100 liters (26 gallons) and will be used exclusively to produce strains of bacteria. Though listed at a specific capacity, the fermenters do not produce the same volume because room is needed for the microorganism populations to grow. For example, the 200 liter fermenter has a working volume of 150 liters, while the 1,500 liter fermenter has a working capacity of 1,000 liters.

The three fermenters are housed in a building refurbished specifically to accommodate them. Building refurbishment included a new water system to provide purified water for growing *Erwinia herbicola* that simulates the Plague pathogen *Yersinia pestis*, and *Bacillus globigii* (BG), that simulates the Anthrax spore *Bacillus anthracis*.

Since the early 1990s, concern over a biological attack by terrorists or rogue nations has dramatically increased worldwide, prompting more tests of new or modified detectors, filtration systems, decontaminators and decontaminants. More testing means more simulant materials are needed.

"In the past, when someone said they wanted 1,000 liters of *Erwinia* (herbicola), I had to run the 150-liter fermenter about eight times over the course of four or five weeks," said Arthur Schwedler, microbiologist. "Now, we can produce 1,000 liters in one run, in about a week."

The 1972 Biological Weapons Convention, signed by most countries, bans the development and stockpiling of biological weapons. While it does allow limited production of bio-



Photo by: Al Vogel

Two new fermenters sit ready for use in a refurbished building of the West Desert Test Center, U.S. Army Test and Evaluation Command. The high-capacity fermenters will grow benign bacteria that simulate a biological weapon for testing detectors and other bio-defenses at Dugway Proving Ground, Utah.

agents for testing defenses, it forbids their use outdoors, restricting them to labs with extremely high containment requirements. As an added precaution, the live bio-agents are killed by steam (autoclaving) or irradiation, before testing in labs that have redundant safety and air filtration systems.

Simulants are benign, however, and may be used outdoors in varying wind, temperature, humidity, smoke and dust conditions – replicating a real attack or incident. Some of the simulant is used to train various first-responders – police, fire, FBI, military, emergency medical – how to deal with a suspected biological attack and to safely practice lab procedures.

Growing the simulants begins with a flask of about 2.8 liters of starter microorganisms in their nutritional medium. From there, they're grown to about 10 liters and transferred to the larger fermenters of 100, 200 or 1,000 liters. When the desired amount is reached, the simulant microorganisms are put through a continuous flow centrifuge, separating them from the growing medium. The result is a paste of millions of microorganisms, resembling modeling clay. The paste is air-dried, so it

can be milled into a powder just as a bio-weapon would be.

To simulate a bio-weapon, various components may be added to help the simulant disperse in the air or along a surface – or not. “In the real world, though, I think the bad guys would take it out of the fermenter and use it without all this processing,” Schwedler said.

Customers who have bio-defense items tested at DPG include civilian and military agencies, manufacturers and occasionally a foreign ally.

Schwedler obviously enjoys growing microorganisms. A few years ago, he helped make beer at the Trax microbrewery in nearby Tooele, Utah. He did it free to learn the equipment, and was paid with meals. Today, Schwedler makes beer at home as a hobby.

A DPG employee for 27 years, Schwedler recalls the urgency wrought by Iraq's 1990 invasion of Kuwait. Bio-defense testing ramped over fears Saddam Hussein would attack with biological agents. Today, the urgency isn't as intense but the concern is very real. In 2001, envelopes of anthrax were mailed to some legis-

lators and the media. American post offices now screen mail for biological agents.

The Department of Homeland Security has installed bio-weapon detectors in more than 30 U.S. cities, sampling the air to warn of an attack – and wants to upgrade and expand the system.

The Life Science Division's capability to create more simulants, faster than before, will help speed the testing of bio-defenses that might save millions of lives around the world. In the future, if an attack or outbreak is averted, success may be traced back to a microbiologist-cum-brewmeister and new, spacious accommodations for benign microorganisms.

The West Desert Test Center, U.S. Army Test and Evaluation Command (ATEC), is the Department of Defense's lead tester for U.S. and allied chemical and biological defense equipment and chemical, biological and radiation contamination survivability of defense materiel. ATEC plans, integrates, and conducts independent developmental and operational testing and evaluations to provide essential information to acquisition decision makers to ensure Warfighters are equipped with the best systems possible. 



JPEO-CBD

CREATES NEW MEDICAL ACQUISITION OFFICE

By: David Williams, Deputy Chief of Staff, Medical Acquisition, JPEO-CBD HQ

The Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) officially stood up the Medical Acquisition (MED-ACQ) Directorate on March 7, 2012, in response to the realignment of Chemical and Biological Defense Program (CBDP) funding within the Department of Defense that now reflects a 50% medical program portfolio. The JPEO-CBD's Medical Acquisition Directorate is comprised of expertise in defense acquisition, pharmaceutical industry best practices, and regulatory affairs to assist the Milestone Decision Authority in making the best decisions in the acquisition, sustainment, and procurement of medical products for the Warfighter.

The MED-ACQ Directorate, led by Mr. Dave Williams, is charged with the mission to provide independent assessment and portfolio management of the medical programs within the JPEO-CBD Enterprise, to train the JPEO-CBD Enterprise and non-medical community on medical acquisition, and to provide one medical voice for the JPEO-CBD Position. While the Joint Project Managers remain the leads for program execution, the MED-ACQ Directorate will take the lead in coordination at the strategic level (e.g., Health and Human Services (HHS) Public Health Emergency Medical Countermeasures Enterprise and the Portfolio Advisory Council).

The MED-ACQ Directorate has taken the lead on establishing Memoranda of Agreement (MOA) with various inter-agency partners in an effort to provide seamless integration within the Department of Defense (DoD), Academia, Pharmaceutical Industry, and Federal agencies and to enhance collaboration with strategic partners and stakeholders. Some of these efforts include the following:

- HHS / Biomedical Advanced Research & Development Agency (BARDA) – Medical Countermeasures Advanced Development and Manufacturing (MCM ADM) Governance
- JPEO-CBD and U.S. Army Medi-

cal Research Materiel Command (USAMRMC) – Medical Test and Evaluation (T&E)

- JPEO-CBD and Navy Bureau of Medicine and Surgery (BUMED) – BUMED Medical Acquisition Liaison Officer (LNO)
- JPEO-CBD and U.S. Army Office of the Surgeon General (OTSG) – JPEO-CBD Medical Informatics LNO

The JPEO-CBD and HHS/ BARDA MCM ADM Governance MOA will establish a framework for collaboration on projects and activities between BARDA and JPEO-CBD for the National MCM ADM capability. The JPEO-CBD and USAMRMC – Medical T&E effort will establish a framework of collaboration for projects and activities between USAMRMC and JPEO-CBD for Bio-Safety Level 4 T&E Capability, as well as the Special Immunization Program.

The JPEO-CBD MED-ACQ Directorate has increased in personnel and expertise since its chartering as a Directorate by hiring Maria Wood, Chief - Regulatory Scientist; Anastasios Sigambris, Chief - Pharmaceutical Science; and Neil Jensen, Ph.D., Chief-Medical Acquisition Science and Technology. The MED-ACQ Directorate has also taken the lead within the JPEO-CBD in establishing LNO positions within various organizations to better assist in JPEO-CBD efforts, specifically Biosurveillance, with the most recent hire being Mr. Randy Estes, JPEO-CBD Medical Informatics LNO at the United States Army Office of the Surgeon General.

Mr. Estes is a licensed healthcare clinician with expertise in both military and civilian healthcare informatics. As the newly appointed Medical Informatics LNO, Mr. Estes will actively seek engage-



Mr. David Williams (standing) leads the JPEO-CBD's new Medical Acquisition Office.

ment opportunities with relevant Federal, State, and civil agencies that share similar scope, focus, and functionality with the JPEO-CBD as well as those with which an alliance would enhance both agencies' capabilities and reach to include the TRICARE Management Activity, each armed service's Office of the Surgeon General, U.S. Department of Veterans Affairs Chief Information Officer, Defense Health Information Management System, HHS, U.S. Department of Homeland Security, the Armed Forces Health Surveillance Center, the Global Emerging Infection Surveillance & Response System, the Services' Public Health Commands and Centers, various state and local public health departments, the Military Health System, and Chemical and Biological Defense branches of the U.S. Army Reserve and the National Guard Bureau.

As a newly formed Directorate, MED-ACQ is leading the effort in intergovernmental collaboration through the establishment of various MOAs and LNO positions to leverage experience, establish frameworks for project activity, and form better working relationships to help the JPEO-CBD execute its mission. 

The Value of Developing Inter-Agency Partnerships

By: Mr. Don Buley, Deputy Joint Project Manager, Guardian



In a time of diminishing resources it is important for the federal government to more aggressively pursue interagency partnerships that more effectively pursue the development and procurement of common capabilities and solutions.

Presidential Policy Directive PPD-8 on National Preparedness referred to this aim as “facilitating an integrated, all-of-nation, capabilities based approach to preparedness.” The Department of Defense (DoD) has developed numerous technologies over the last 10 years that have direct applicability to support the Homeland Defense Mission. The Department of Homeland Security (DHS) has, and is developing and procuring technologies that could directly support the DoD missions. The questions we at the Joint Project Manager Guardian (JPM-G) are struggling





with, are how do we develop, nurture and maintain the effective and efficient partnerships that have the authority to identify and transition current applicable capabilities. Most importantly, how do we develop, procure, field and sustain common capabilities that best leverage existing funding across the agencies.

In our role as the Army's acquisition lead for force protection, physical security, CBRN consequence management and emergency management solutions, we have had the opportunity to work closely with several Federal Agencies in the development and procurement of capabilities for installations and in support of warfighter requirements.

As a result of these meetings and discussions, we've learned that there is significant overlap of missions, knowledge, talent and capabilities across the federal Government. We also learned that there are significant differences in language, doctrine and procedures that severely limit the ability to leverage or even effectively discuss our requirements and capabilities. In an attempt to improve interagency communications, JPEO-CBD, JPM-G along with the Customs and Border Protection (CBP) (Executive Director, Acquisition Policy and Oversight, Office of Technology Innovation and Acquisition) developed and implemented quarterly summits where we could discuss relevant issues or processes that impact multiple federal agencies (e.g. Federal Bureau of Investigations,

as entry control and explosive detection technologies; information management and decision support capabilities; and persistent surveillance. These summits are not simply to exchange information and facilitate better understanding, but also to identify and leverage requirements, capabilities, research and analysis, test and evaluation data, concept of operations, best practices, and lessons learned. These have proven highly beneficial for our office as we have directly leveraged and integrated multiple DHS software solutions that have significantly improved our Emergency Management Installation Protection Integration Platform, while saving us an estimated \$30M in development costs. We also now directly participate on DHS development IPTs to help develop future capabilities as well as sharing entry control and biometric development data. JPM-G and Night Vision/RSTA are also collaborating with the CBP to identify explosive detection, entry control, information management and persistent surveillance technologies that can be transitioned to other federal agencies in support of homeland security operations as the wars wind down.

Through our collaborative efforts, we've realized our single greatest hurdle impeding progress is the development and approval of interagency requirement documents. Agencies define and capture their operational requirements

step forward in developing and implementing true interagency programs and begin breaking down these barriers and impediments by implementing discussion and education of our processes with our agency partners. By setting realistic expectations moving forward we understand that this is a potentially lengthy



process and also that the development and implementation of a single requirements generation process is not likely, however we are optimistic that this effort will lead to a better understanding by the participants of who to work with and how to better leverage ongoing and future requirements generation efforts. This should facilitate the development, procurement, fielding and sustainment of more common and interoperable operational capabilities across the government. Open, effective and consistent communications across agencies is the critical element to the development and



Coast Guard and Transportation Security Administration). To date we have held three successful summits which have covered a variety of topics, such

in a variety of formats and processes that are not well understood outside the generating agency. In our next summit we hope to take a significant

implementation of real, all government solutions that make best use of limited resources while providing the best possible capability. 

SAFE TO FLY

Leading the Development of a Joint Service Protocol

By: *Dr. Mohamed Athher Mughal and Mr. James Barnaba,
Air Force Chemical Biological Branch*

The Air Force Chemical Biological (CB) Branch recently led a multi-service working group with the goal of developing a joint service protocol for performing Safe-to-Fly (StF) evaluations of aviation clothing items. The CB Branch, a part of the Human Systems Division (HSD) of the Aeronautical Systems Center (ASC) at Wright Patterson Air Force Base, is located on the Edgewood Area of Aberdeen Proving Ground. Branch personnel provide program support to the Joint Program Executive Office for Chemical and Biological Defense.

The StF evaluations are a set of technical evaluations that each branch of the armed forces uses to ensure new materiel items do not obstruct, hinder, or interfere with the user during required actions or procedures within an aircraft or airframe and that the item does not present an undue or unmitigated hazard or impediment to the users or to the aircraft or airframe under normal or emergency conditions. Currently, each Service conducts its own set of StF evaluations. Through the multi-service working group

convened at the JPEO-CBD site, over twenty-five joint service participants from the Army, Navy, and Air Force developed a first-ever draft outline for a joint service StF protocol for aviation clothing, footwear, and gloves.

The Safe-to-Fly Process

The StF evaluations result in StF recommendations. The StF recommendations are designed to define, manage, and ensure the safety and human integration of materiel solutions prior to operational fielding. In short, new materiel should meet its basic functional performance requirements related to flight safety or protection. In order to be considered safe to fly, it should also: not cause any new hazards to the user, crew or aircraft; not interfere with proper use of other mission equipment; not interfere with proper use of emergency equipment; not interfere with the user accomplishing mission/operational activities; and not interfere with user

accomplishing emergency activities. The StF process is conducted for all newly developed items, development test and operational test items, item modifications, product improvements, Non-Developmental Items (NDI), Urgent Operational Need (UON) items, and Commercial Off-the-Shelf (COTS) items which will be installed in or operate aboard aircraft. The StF process is slightly modified in support of the unique needs of each of these program types.

Why Develop Joint Service Safe-to-Fly Processes?

Although each Service conducts its own StF evaluations, there are commonalities in the testing and standards associated with those evaluations. Joint Service StF processes based on these cross-Service commonalities can provide economies and efficiencies in two important respects: one, a reduction in total program cost since testing is



Joint Service Aircrew Mask



Joint Protective Aircrew Ensemble

conducted once and test data are shared amongst the Services; two, acceleration in overall program schedule since StF testing is conducted once for all Services rather than once for each Service. Using a properly developed joint service StF protocol, these efficiencies and economies in schedule and cost can be realized with no diminution to performance. For these reasons, the over twenty-five multi-service subject matter experts who participated in the Air Force CB Branch's StF working group were eager and excited by the prospect of developing a first-ever joint service protocol for evaluating aviation clothing items.

What We've Done So Far

Less than a month after our first meeting, participants of the joint service StF working group organized the discussions and proceedings of the meeting into a set of draft documents that now serve as a basis for codifying a DoD-wide, joint service protocol for conducting StF evaluations for flight clothing, gloves, and footwear. The first draft protocol

addresses StF standards with regard to: compatibility with personal protective equipment, aircrew flight equipment and CBRN equipment; interface with aircraft platform; water landing, water survival, and ingress/egress; burn protection for clothing and gloves; electrostatic dissipation; thermal heat stress; windblast; durability assessment; and footwear criteria. The working group's goal is to achieve final products that serve as more than academic treatises on joint service StF, but rather guidelines that provide working-level evaluators hands-on tools for conducting actual StF evaluations. To that end, where possible, the draft protocol includes checklists to guide and assist evaluators in conducting and documenting StF evaluations.

Summary

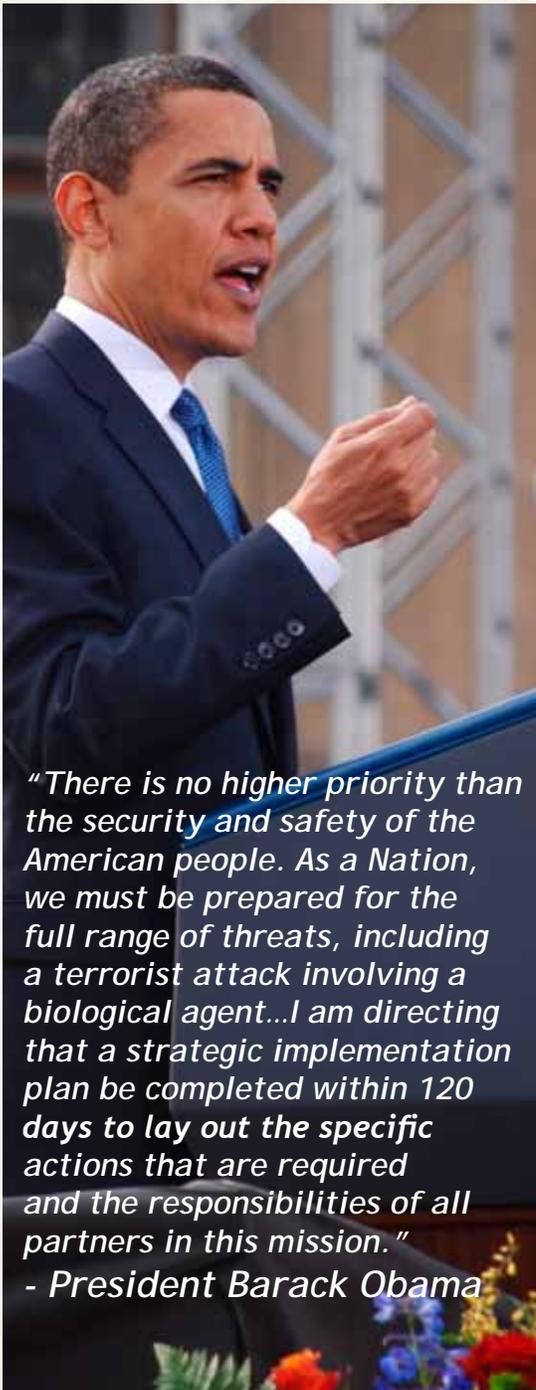
In March 2012, the CB Branch convened and led a multi-service working group with the goal of developing a joint service protocol for performing Safe-to-Fly (StF) evaluations of aviation clothing items. By April 2012, the members of the working group reduced the discussions and proceedings of the meet-

ing into a set of draft DoD protocols for conducting StF evaluations for aviation clothing, gloves, and footwear. These joint service protocols, once completed, will provide the joint service community economies and efficiencies in program schedule and cost with no reduction in performance. When asked about the CB Branch's recent effort towards developing this joint service protocol, the Air Force CB Branch's Materiel Leader, Lt. Col. Pamela Howard-Whitehurst said, "My staff is already providing responsive, on-site support to the JPEO-CBD's project portfolio. I'm delighted that we're now also beginning to provide technical and programmatic benefits to the larger joint service community."

The Air Force CB Branch is eager to finalize, coordinate, and publish the draft joint service protocol for conducting StF evaluations of aviation clothing. When successfully completed, the process used to develop and publish this protocol can and should be replicated to create similar protocols for other families of weapon systems. 

The National Biosurveillance Strategy

By: The White House National Security Staff



"There is no higher priority than the security and safety of the American people. As a Nation, we must be prepared for the full range of threats, including a terrorist attack involving a biological agent...I am directing that a strategic implementation plan be completed within 120 days to lay out the specific actions that are required and the responsibilities of all partners in this mission."

- President Barack Obama

The National Strategy for Biosurveillance released by the White House National Security Staff on July 31, 2012, promotes an all-of-nation approach that brings together Federal, state, local, and tribal governments; the private sector; non-governmental organizations; and international partners to identify and understand threats as early as possible and provide accurate and timely information to support life-saving responses. This first-ever National Strategy for Biosurveillance builds on the capabilities already in place and further institutionalizes our efforts to ensure that we are doing everything possible to identify and understand threats as early as possible.

The threat of bioterrorism and other incidents affecting human health remain a clear and present danger. Early threat detection and sustained situational awareness are critical to save lives and improve outcomes in the context of a national health emergency, where the lives of a vast number of our fellow citizens could be in danger and result in significant economic, societal, and political consequences. This national strategy is aimed at galvanizing action to further integrate and extend our dynamic, distributed national network of expertise and capabilities to protect Americans.

Building on concepts from the National Security Strategy, the Biosurveillance strategy seeks to promote a unified national effort with focused priorities, where we define biosurveillance as the process of gathering, integrating, interpreting,

and communicating essential information related to all-hazards threats or disease activity affecting human, animal, or plant health to achieve early detection and warning, contribute to overall situational awareness of the health aspects of an incident, and to enable better decision making at all levels. Whether the threat is deliberate, accidental, or naturally occurring, we must further develop and integrate our biosurveillance capabilities and expertise across the Nation that can help keep our citizens safe.

Advances in technology, the advent of social media, and new science in the areas of detection and characterization capabilities provide new opportunities to strengthen our national biosurveillance enterprise. In addition, by focusing on the most important information, and shaping the enterprise to meet that need, we can do more with less. An evermore coordinated approach that brings together Federal, state, local, and tribal governments; the private sector; non-governmental organizations; and international partners is also fundamental to doing all we can to identify and understand threats as early as possible and provide accurate and timely information to develop the effective responses that save lives. As a next step, during the next 120 days, the Administration will lay out specific action steps going forward. It is by working together that we can best promote the resilience of the Nation and act to protect the American people. 



IN MARCH, JOINT PROJECT MANAGER TRANSFORMATIONAL MEDICAL TECHNOLOGIES (JPM-TMT) AWARDED A FOUR-YEAR, \$138.5M CONTRACT TO MEDIVECTOR, INC., A SMALL BUSINESS BASED IN BOSTON, MA., TO FURTHER DEVELOP **FAVIPIRAVIR (T-705)**, A BROAD-SPECTRUM THERAPEUTIC AGAINST MULTIPLE INFLUENZA (FLU) VIRUSES, INCLUDING THE 2009 H1N1 PANDEMIC VIRUS AND DRUG RESISTANT



JOINT PROJECT MANAGER
TRANSFORMATIONAL MEDICAL TECHNOLOGIES

New Drug to Fight Could Have Ev

“Favipiravir (T-705) has the potential to be an effective treatment not just for multiple strains of influenza but many other viruses as well.”

What was it about the proposal from MediVector, Inc. that convinced the selection team to make this award?

In short, this was a best value decision. A number of good candidates submitted proposals and after a great deal of analysis, MediVector’s drug, *Favipiravir* (T-705), was chosen. This drug candidate has a unique mechanism of action that has demonstrated both safety and efficacy in humans and animal models. The flu virus infects cells and then goes through a replication process to multiply and infect other cells. *Favipiravir* (T-705) works differently from currently available drugs by selectively disrupting the viral RNA transcription process to stop replication. In a study of 38 clinical flu strains, many demonstrated resistance to currently approved therapeutics. However, none of these strains demonstrated resistance against *Favipiravir* (T-705).

Because so many other viruses work the same way, this novel approach to disrupting RNA replication is exciting due to its potential for broad-spectrum application.

What do you mean by “broad-spectrum”?

In reference to medical countermeasures, a “broad-spectrum” treatment is one that will work against a wide range of disease-causing agents. *Favipiravir* (T-705) has the potential to be an effective treatment not just for multiple strains of influenza but many other viruses as well. It is exactly the kind of project JPM-TMT was established to support.

JPM-TMT is known for pushing the scientific envelope on high-risk programs in order to rapidly provide broad-spectrum medical countermeasures and adaptable platform capabilities. Established in 2006 as a five year research initiative (formerly known as Transformational Medical Technologies Initiative

INFLUENZA STRAINS. LIEUTENANT COLONEL DAVID GIBSON IS JPM-TMT'S JOINT PRODUCT MANAGER FOR THE EMERGING INFECTIOUS DISEASES-INFLUENZA MEDICAL COUNTERMEASURE (EID-FLU MCM) ACQUISITION PROGRAM. HE JOINED JPM-TMT'S PROJECT MANAGEMENT OFFICE IN EARLY 2011.

TO MAKE THIS CONTRACT AWARD, JPM-TMT'S EID-FLU MCM ACQUISITION PROGRAM HAS INVOLVED THE COLLABORATIVE EFFORTS OF ORGANIZATIONS ACROSS THE DEPARTMENT OF DEFENSE (DOD) AS WELL AS OTHER FEDERAL AGENCIES. IT IS AN APPROACH THAT IS TYPICAL FOR ALL JPM-TMT ACTIVITIES.

ht Influenza *An Interview with Lt. Col. David Gibson*

en Broader Impact

By: Arlene Goyette, Communications Director, JPM-TMT



JPM-TMT's EID-Flu MCM acquisition program is specifically focused on the advanced development of a flu therapeutic that has the potential to treat drug resistant flu strains and other viruses as well.

[TMTI]), its end-to-end development efforts were based on a "one-drug, many bugs," or broad-spectrum, approach. Since then, the initiative has evolved into a full-fledged program and chartered project management office within the JPEO-CBD.

JPM-TMT has garnered support after achieving a variety of successes with its efforts on Ebola, Marburg, animal models [see related article in Vol. 8 No. 2], and now influenza.

What was the process for making this contract award, and what agencies and organizations were involved?

JPM-TMT requested proposals under a full and open competition, a key component of the overall acquisition strategy, and we convened a multi-disciplinary team to conduct the source selection. The team included representatives from the JPEO-CBD, JPM Chemical Biological Medical Systems (CBMS), Joint Science and Technology Office (JSTO), Defense Threat Reduction Agency (DTRA), U.S. Army Medical Research Materiel Command (USAMRMC), Military Infectious Disease Research Program (MIDRP), National Institutes of Health–National Institute of Allergy and Infectious Diseases (NIH–NIAID), the Office of the Deputy Assistant Secretary of Defense–Force Health Protection & Readiness (DASD–FHP&R), and Department of Health and Human Services (DHHS)–Biomedical Advanced Research Development Authority (BARDA).

What has happened since the award was made?

We initiated a base period to establish the Earned Value Management System as required by DoD policy. We are working with MediVector to refine the work packages and the Integrated

“More Americans have died from the flu virus than any single war in the history of our nation.”

Master schedule as we prepare to begin Phase 3 clinical trials. If everything goes as planned, Phase 3 clinical trials will start this fall.

What are some of the challenges that lie ahead for MediVector’s drug candidate?

MediVector is now at the critical stage in the drug development process of proving the safety and efficacy of its product to the U.S. Food and Drug Administration (FDA). Fortunately, MediVector has already made notable progress and is well on its way to obtaining FDA approval.

Originally discovered by Toyama Chemical Co., LTD., a subsidiary of FUJIFILM Holdings Corporation, Favipiravir (T-705) has already completed extensive safety and efficacy clinical trials in Japan, including Phase 3 clinical trials. While the Japanese drug approval regulatory requirements are different from that of the FDA, we believe that Favipiravir’s (T-705) progress in the Japanese clinical trials will mitigate some of the risks associated with the advanced development of Favipiravir (T-705) in the United States. Additionally, the tremendous data obtained from the Japanese studies can be leveraged by our program as we continue through clinical trials here. The greater than anticipated technological maturity of Favipiravir (T-705) already is enabling us to adjust a number of tasks, studies, and work package sequences to accelerate the acquisition



During the contract kick-off, LTC David Gibson explained the major milestones MediVector must meet during the life cycle of its contract.

program by at least two years. That’s good news for everyone because it enables us to more rapidly provide a treatment to the Warfighter and the nation, at a cost far below what was originally estimated.

How soon do you foresee there being a flu drug available to treat the Warfighter?

We anticipate FDA approval of Favipiravir (T-705) in the third quarter of fiscal year 2016. However, since Favipiravir (T-705) is currently at an advanced stage of development, in the event that a domestic health emergency—such as an influenza pandemic— is declared before FDA approval is obtained, the secretary of Health and Human Services may issue an Emergency Use Authorization (EUA) and permit the FDA Commissioner to allow usage of Favipiravir (T-705) if no adequate, approved, or alternative medical product is already available.

What are some of the key milestones you will be working toward as the development process moves forward?

Our acquisition program’s first key milestone, called the Milestone B decision, is scheduled for November 2012. This is the point where the Milestone Decision Authority, Brigadier General Jess A. Scarbrough, reviews the program’s progress to ensure that the strategy, documentation, and funding are aligned and in place for a successful acquisition effort. We’re excited about this review because it will enable us to proceed to the next major milestone, Phase 3 clinical trials.

Why should the DoD invest in a therapeutic for influenza?

Whether naturally occurring or weaponized, the influenza virus is a biothreat, and the President of the United States and DoD leadership have directed that it be added to the Chemical Biological Defense Program portfolio.

More Americans have died from the flu virus than any single war in the history of our nation. Consider the impact of the 1918 Spanish Influenza Pandemic—one third of the world was infected and the virus claimed approximately 50 million lives. That was with a strain that demonstrated mortality rates of about 2.5%. Even with seasonal influenza, the Centers for Disease Control and Prevention estimates that every year, the U.S. attributes about 36,000 deaths to influenza, with strains demonstrating mortality rates of between 0.5 and 1%. That’s nearly seven times the death toll experienced in 10



The 1918 Spanish Influenza Pandemic claimed approximately 50 million lives worldwide.

years of combat in Iraq and Afghanistan. With the H5N1 flu strain—also known as “bird flu”—demonstrating mortality rates greater than 60%, you can imagine the potential impact on the Joint Force and the nation if an outbreak of this deadly strain were to occur naturally or be genetically engineered and weaponized.

Recently, controversial research has increased concern about the potential for weaponization of the influenza virus. Separate studies conducted at the Erasmus Medical Center in Rotterdam, Netherlands, and the University of Wisconsin-Madison demonstrated how mutated forms of the H5N1 influenza virus can be spread amongst ferrets via respiratory transmission. These studies have fueled intense debate among the medical community. Many fear that publication of the research could provide our adversaries or would-be terrorists the vital information needed to produce the mutated form of the virus as a biowarfare agent. Unfortunately, the genie was let out of the bottle when the preliminary information on the studies was released at a September 2011 conference held in Malta.

In February 2012, the World Health Organization convened in Geneva, Switzerland, to debate the publication of the studies. The unexpected outcome of that meeting was to allow full publication. The research conducted at University of Wisconsin -Madison was published in the May 2012 issue of Nature magazine. Although many believe science works best in the open, others are concerned that those seeking to replicate the studies could do so with the potential to cause catastrophic outcomes.

How is JPM-TMT's approach different from what other organizations are pursuing in the area of emerging infectious diseases in general and influenza in particular?

In particular, we primarily are focused on treating Warfighters and DoD civilians, domestic or abroad. Additionally, we are

only pursuing platform or broad-spectrum technologies. JPM-TMT seeks to expedite the response to a biological event by facilitating the advanced development of solutions that are effective against a wide range of unknown biological pathogens, as well as emerging infectious diseases.

As part of the Integrated National Biodefense Medical Countermeasures Portfolio, however, JPM-TMT complements the efforts of the DoD, inter- and intra-agency, academic, and industry partners by coordinating our research, development, evaluation, and acquisition. Our coordination among government agencies ensures transparency, helps to manage risk, and reduces overlap of efforts.

Since we have flu vaccines, why do we need a treatment (i.e., therapeutic) as well?

Although vaccines can be highly effective in preventing infection, they are not infallible. The flu vaccine is prepared each year based on the forecast of an international network of labs organized by the World Health Organization predicting the viral strains expected to be most prevalent. Sometimes they are right on. Other times, the virus mutates to a strain where the vaccine is ineffective. By having effective therapeutics, we have another capability to protect Warfighters and the nation against the flu virus—whether it occurs naturally or via malicious genetic engineering.

With the DoD's involvement, JPM-TMT is adding to our nation's medical arsenal. Not only will JPM-TMT's broad-spectrum therapeutic, *Favipiravir* (T-705), treat the flu virus, it also may help address other diseases or bio-agent challenges as well.

Involving organizations throughout government, as well as industry and academia, is an important component of what JPM-TMT does every day. To be transformative in the advanced development of medical countermeasures, JPM-TMT brings together ground-breaking ideas from all types of innovators.

Most notably, JPM-TMT has worked effectively with its contractors in navigating the FDA approval process to have three drugs—therapeutic candidates for Ebola and Marburg viruses—currently in Phase 1 human clinical trials. One drug has even been granted FDA “fast track” status.

JPM-TMT is also working with multiple organizations, including the FDA, other JPMs, DoD, and government agencies that are developing medical countermeasures, to further develop animal models through its role as co-chair of both the Animal Model Development and Qualification Working Groups (AMDQWG) and the animal model subgroup of the Filovirus Animal Nonclinical Group (FANG). Information shared in these groups helps ensure that the dollars spent by one organization ultimately benefit many others, increasing the chances of success.



When CBRN questions arise ...



CBRN-IRC provides the answers

By: Hung Pham, Chief, Information and Technology Solutions Branch, Edgewood Chemical Biological Center

The CBRN-Information Resource Center (IRC), an element of the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD), supports the CBRN community of users by providing a “one stop shop” for all CBRN-related questions. Inquiries may be submitted around-the-clock via a telephone call, through a internet-based form, or by sending an e-mail.

The CBRN-IRC consists of a team of professionals with backgrounds in logistics and quality assurance. They rely on authoritative subject matter experts (SMEs) and an extensive database of information on CBRN systems to respond to the wide variety of inquiries that come in daily. Working with the scientists, engineers, program managers, logisticians, and other experts from the JPEO-CBD, Edgewood Chemical Biological Center (ECBC), TACOM Life Cycle Management Command, and Joint Equipment Assessment Program (JEAP), the CBRN-IRC provides the best answers possible to all customers. Often, the answers provided directly impact the life and safety of service members, first responders, and civilians.

Ms. Nannette Ramsey, the Site Director of ECBC at Rock Island, who provides the manpower to operate the CBRN-IRC on behalf of JPEO-CBD, said, “We strive to deliver superior customer service, everyday. Our dedicated staff works in

conjunction with subject matter experts to ensure that the answers provided to our customers contain the most accurate and up-to-date information available.”

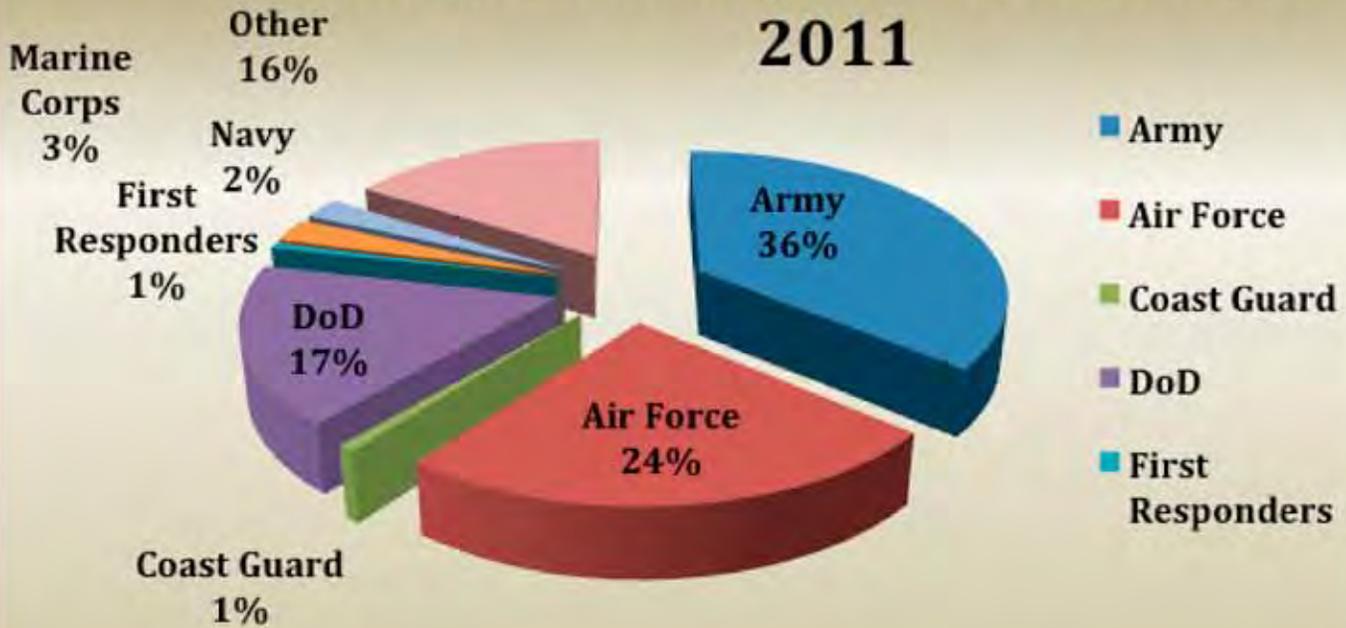
Essence of Speed

A CBRN threat could appear at any time; consequently, timing is critical for both the submission of an inquiry and its response. The CBRN-IRC strives for the quickest turn-around time possible for every inquiry. Most are resolved within hours. When an inquiry requires additional time for coordination and research to provide the answer, the IRC staff diligently follows up to ensure that actions are taken in a timely manner. The IRC comprehensive range of resources provides a support structure designed to help assess situations, research alternatives, and quickly deliver responses that prevent or limit the impacts of CBRN-related potential disasters, faulty equipment or uncontrollable events.

When a CBRN emergency occurs, the CBRN-IRC stands ready to deliver information that helps the CBRN users to prepare for, or recover from such events. A CBRN crisis requires effective communication; rapid acquisition and distribution of CBRN defense materiel; and accurate, up-to-date information and procedures. Such information and associated subject matter experts are readily accessible through the IRC.

The CBRN-IRC has been in operation since its charter by the JPEO-CBD in 2007. The JPEO charter established the IRC as “the single entry point for all requests for information related to the Chemical and Biological Defense Program.” Since its creation, the volume of inquiries has increased in proportion to the CBRN users’ awareness of the support provided by the IRC, and the high level of quality of the service and information the IRC delivers. The IRC responded to over 2,000 CBRN inquiries in FY 2011. The U.S. Army users gener-

CBRN-IRC INQUIRY BY SERVICE 2011



ated the most inquiries with 36% of all calls, followed by the U.S. Air Force and DoD with approximately 24% and 17%, respectively (see graphic).

“When emergency situations arise,

the IRC team works long hours,” said Ms. Ramsey. “Following the 2011 Tsunami catastrophe in Japan, which resulted in damage of a nuclear power plant, the IRC received numerous calls

about a wide variety of CBRN related concerns. It was essential for ECBC and the JPEO to have CBRN information, resources, equipment data and subject matter experts available to respond to the calls, emails and web site, around the clock.”

“The overall feedback we receive from our customers on the level of service, response quality and turn-around time of the IRC has been very positive,” said Ms. Pat Estep of the JPEO-CBD Knowledge Management Directorate, who oversees the CBRN-IRC. “Generating awareness of the IRC across all Government services will improve communications, extend our ability to respond to CBRN events and enhance our capability to sustain CBRN defense materiel, regardless of the complexity or level of urgency.”

Ms. Estep added, “The IRC will continue to respond quickly and to inform customers of the technical and logistical support that is available for CBRN defense materiel. As awareness of the CBRN-IRC grows, along with the changing requirements necessary to combat CBRN vulnerabilities, we expect to see more inquiries from a wider range of Government agencies.”

CBRN INFORMATION RESOURCES

CBRN JPEO-CBD Subject Matter Experts	Located globally, including program managers, scientists, research analysts, and staff personnel within the JPEO-CBD and Joint Project Managers (JPM) offices.
TACOM Life Cycle Management Command Logistics and Item Management Teams	Including Item Managers, Equipment Specialists and Logisticians who manage CBRN materiel.
Joint Equipment Assessment Program (JEAP)	Located nationally, providing the CBRN-IRC with information and data on status of production lots, quantities, shelf life testing requirements and expiration dates.
CBRN Engineers, Scientists, Equipment Technicians, Test Experts, and Knowledge Database Systems	Available from ECBC, as well as other laboratories and research organizations across all Military Services. Includes Configuration Managers, Commodity Engineers, Design Engineers, Test Engineers, Quality Assurance Specialists, Industrial Base Analysts, and Information Technology Analysts who provide expert technical support to all CBRN commodities.
JPEO's Joint Acquisition CBRN Knowledge System (JACKS)	http://jacks.jpeocbd.army.mil . – Accessible to all users across the Department of Defense (DoD) with Common Access Card-access. This is the one-stop, single interface for information regarding all CBRN Defense Equipment.

photo spotlight

Joint, Interagency, Multinational, Indu



The 2012 Joint, Interagency, Intergovernmental, Multinational, Industry, and Academia Exhibition, sponsored by the Chemical Corps Regimental Association, provided a venue for the exchange of CBRN defense information among Warfighters, CBRN incident responders, technology developers, acquisition professionals, and the supporting industry. This exchange will help to provide a better understanding and increased responsiveness to CBRN defense users' needs.



Intergovernmental, Industry, and Academia Exhibition

Fort Leonard Wood, MO



Joint Biological Point Detection System Technology Refresh Program

Cost Efficient Updates to Support the Warfighter

By: *Kevin Pohlman, Lead Systems Engineer, Chemring Detection Systems, Inc.*
Eric Struba, Systems Engineer, JPM-NBC Contamination Avoidance

The Joint Biological Point Detection System (JBPDS) is an integral component of the United States' overall biological defense capability and has been for over 10 years. The JBPDS is an automated biological detection and identification system that detects, identi-

the detection, collection, identification, sample transfer/storage, and warning functions. The JBPDS can be integrated into multiple platforms, to include shipboard, HMMWV / STRYKER mountable shelter or fixed emplacement. Multiple systems can be networked for command and con-

JBPDS is based on technology that is 10 years old. As a result, the JBPDS government team, led by the Joint Project Manager for Biological Defense, and the contractor team, led by Chemring Detection Systems, Inc., and Battelle Memorial Institute have the opportunity to reduce the system's overall cost to the Department of Defense. The JBPDS Technology Refresh Engineering Change (JTR) Program was initiated in 2009 to achieve this goal.

The JTR is an ongoing effort, currently in a 24 month critical design and developmental test phase, with completion scheduled in the second quarter of fiscal year 2014, including delivery of test hardware. The next phase of the project will complete Integrated Logistics, First Article Testing and formal Operational Testing, with the First Unit Equipped planned for fourth quarter of fiscal year 2015.

The primary objective of the JBPDS JTR Program is to incorporate updates into JBPDS that will reduce lifecycle cost while improving usability, maintainability, and reliability. The JTR update will be implemented into new JBPDS production builds and retrofit kits so that systems already fielded can gain the benefits. To achieve the necessary gains, JTR will include a modernized computing system, the Computing and Control Subsystem (CCS) and a more discriminative detector, the Rapid Agent Aerosol Detector (RAAD).

The linchpin of the JTR update is the incorporation of the RAAD (Figure 2). Designed by the Massachusetts Institute of Technology – Lincoln Laboratory, the RAAD uses orthogonal technologies to substantially reduce the number of false detections of the JBPDS. Since the detec-



Figure 1. Shelter Mounted JBPDS (M97). The JTR system will provide the warfighter a biological detection capability that is easier to use, more reliable, adaptive to change, and significantly less costly to operate and maintain than the currently fielded systems.

fies, and then warns the operator if a harmful biological agent is present in the environment. The system provided protection at the 2002 winter Olympics and has been deployed to the Joint Services since 2003.

The JBPDS (Figure 1) utilizes six Line Replaceable Units (LRUs) that perform

control from a single operational interface to provide a broad area of surveillance.

Over 700 of the biological detection and identification systems have been delivered to the United States government through the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD). Although a capable system, the



Figure 2: Prototype Rapid Agent Aerosol Detector (RAAD). Through reduced false positives, the RAAD will significantly reduce JBPDS operating costs.

tion process triggers a sample collection and identification process which utilizes expensive consumables, the reduced false positive detection rate of the RAAD proportionally reduces operational costs.

In addition to saving costs on operating consumables, the reduction in the number of samples taken as a result of the RAAD incorporation is forecasted to greatly improve the reliability of the LRUs responsible for the collection, fluid transfer, and identification functions. Because these functions will be performed less often, the reliability of the LRUs that perform the collection, fluid transfer, and identification functions will proportionally increase. The reliability of the JTR system is expected to increase 50% over currently fielded systems. The user of the JTR system will benefit from a reduced maintenance burden as a result of the improved reliability.

Another substantial technology improvement, the CCS (Figure 3), is a computing system update for the JBPDS. The CCS will consolidate six computing hardware configuration items into one and increase the reliability of the JBPDS while reducing the necessary configuration items that the government supply chain will need to procure, stock, and track.

The current computing system in JBPDS is beyond its useful life and facing the need for continual obsolescence upgrades. The consistent obsolescence mitigation efforts have lead to multiple computing configurations in the field adding substantial sustainment costs.

The modernized CCS will combine multiple computing hardware configuration items into one ruggedized Commercial Off-the-Shelf (COTS) computing format. The use of a standardized computing format increases the potential sources of supply for the JBPDS computing hardware which will reduce the risk of obsolescence.

The CCS incorporates additional design features to mitigate the threat of obsolescence. One such mitigation technique incorporates the use of signal re-mapping adapters so that the CCS backplane can be adapted to more than one supplier's circuit card configuration.

In addition to reducing obsolescence risk, the CCS is designed to be more robust against environmental stressors than the current JBPDS computing system.

The updated hardware will require a restructuring of the JBPDS computing software. The new formulation of the software architecture for the JTR system will provide an easily upgradable interface to future identification, collection, and fluid transfer technologies. The software architecture technique accom-

modates updated data interface protocols when new technology is inserted. The JTR system will have four Computing System Configuration Items (CSCIs): one that will coordinate the overall JBPDS activities and one each that will coordinate the identification, the collection, and the fluid transfer activity. The separation of the JBPDS functions into CSCI modules will allow for the incorporation of new technologies without substantial software design activity.

The JTR product will incorporate usability enhancements. Some examples of usability improvements include the ability for the JBPDS to communicate on a Common CBRNE Sensor Interface (CCSI) network and the ability to remove and replace LRUs without shutting down or re-starting the JBPDS, saving as much as 25% of the total maintenance time.

The cost of the JTR effort, with full force modernization, is forecasted to be recouped within eight years through the implementation of an architecture robust against obsolescence, adaptive to upgrade, and efficient with consumables. The 2015 fielding of the JTR system will provide the warfighter a biological detection capability that is easier to use, more reliable, adaptive to change, and significantly less costly to operate and maintain. 



Figure 3: JBPDS JTR Computing and Control Subsystem (CCS). Through a modernized architecture, the CCS will reduce costly obsolescence management.



Supporting Our Service Members

**With the Right Products
At the Right Place,
At the Right Time,
At the Right Cost**

