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JPM-ColPro Product Director CBRN Filtration Needs

Joint Project Manager for Individual Protection and Collective Protection Industry Day

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Agenda

- Vision
- ColPro Basics
- PD Mission/Services
- CBRN Threat
- CBRN Purification Goals
- CBRN Purification Element Needs
- CBRN Purification System Needs
- Summary
- Contact Information



PRODUCT DIRECTORS VISION

- Are the recognized “GO TO” source for ColPro expertise within DoD
- Provide “CUTTING EDGE” ColPro capabilities to all Users
- Establish relationships with industry to provide optimal ColPro capabilities to all Users
- Serve as the ColPro technology/integration “Honest Broker” for platform Program Managers
- Offer the optimum level of support while being flexible enough so as not to be a hindrance.



Why Collective Protection?

Hazardous environments can be created by conventional or asymmetric means --- ColPro:

- **Provides safe operational areas that:**
 - Affords shirt-sleeve environment
 - Prevents infiltration & the spread of contamination
 - Provides clean, breathable air
 - Reduces the need for decontamination
- **Typically protects areas or zones such as:**
 - Command and control
 - Medical care
 - Mission critical
 - Rest and relief
 - Weapon system control





Collective Protection Basics

- Where is Collective Protection typically required?
 - **Command/control areas**
 - **Medical areas**
 - **Rest/relief areas**
- Collective Protection Applications:
 - **Mobile**
 - ✓ **Vehicles, ships, aircraft**
 - **Transportable**
 - ✓ **Portable shelters, tents, containers**
 - **Fixed Site**
 - ✓ **Buildings, permanent shelters or temporary shelters**



Collective Protection Systems



**Self-contained
Transportable/Mobile Collective
Protection System**



**Transportable Collective
Protection Systems**



**Transportable Collective Protection
Systems**



Fixed Site Collective Protection



Mobile Collective Protection



Shipboard Collective Protection



JPM-ColPro Product Directors

- Charter:

“Serve as the Joint Program Manager-Collective Protection’s focal point for providing overall direction and guidance for research, design, development, testing, procurement, fielding and provide life cycle oversight for Collective Protection equipment and systems for platforms that provide contamination free areas to protect personnel and equipment against Chemical, Biological, Radiological, Toxic Industrial Material threats.”



PD Services

- **Examples:**

- **Input to requirements documents**
- **Execution of ColPro technology tradeoff studies**
- **Preparation of contractual document input**
- **Preparation of test plans**
- **Preparation of technical /training manuals**
- **Serve as contract ColPro area technical monitors**

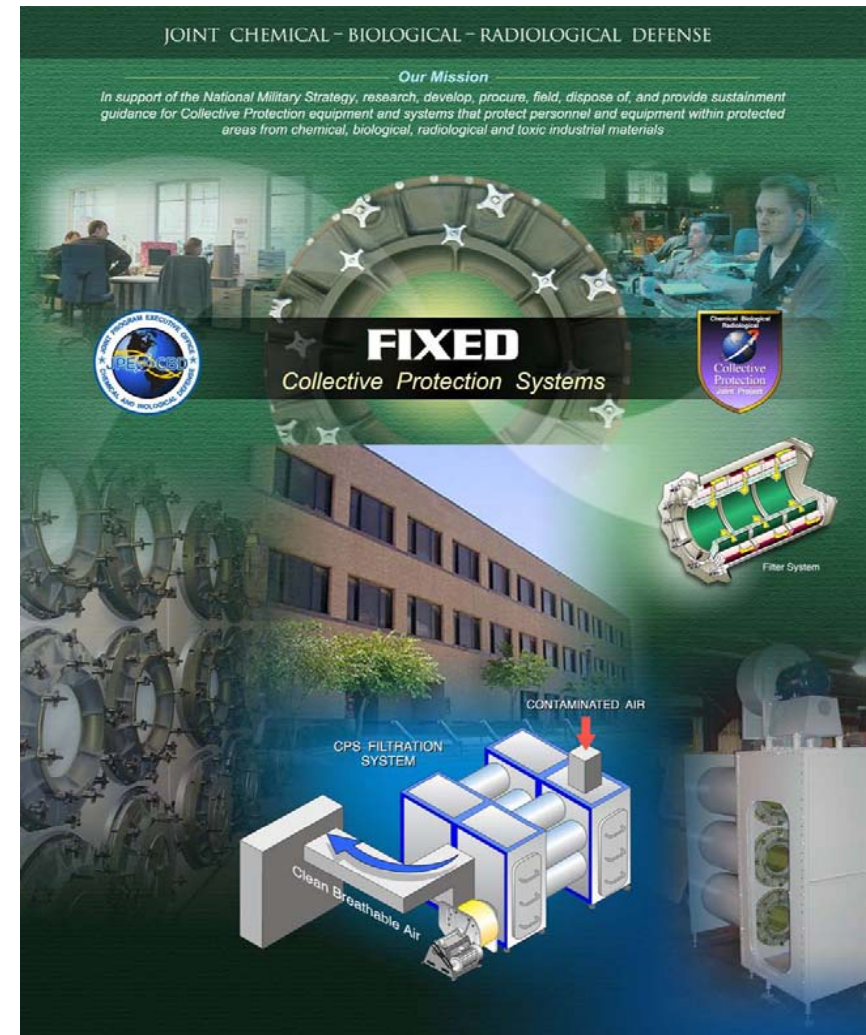


Product Director – Fixed CPS

Product Director – Mr. Walt Dzula, NSWC Z23

FCPS Program Support

- Department of Homeland Security
- Department of State
- JPM-Guardian: On-Demand ColPro System
- Major Commands
- MILCON



Protection for critical facilities and/or discrete critical areas within facilities



Product Director – Mobile CPS

Product Director – Mr. Nick Yura, RDECOM

MCPS Program Support

- Airborne Mobile Platforms
- Analytical Laboratory System
- Expeditionary Fighting Vehicle
- Future Combat Systems
- Joint Light Tactical Vehicle
- Light Armored Vehicle
- M1 Abrams Main Battle Tank
- M2/M3 Bradley Fighting Vehicles
- Medium Mine Protected Vehicle
- Mine Resistant Ambush Protected
- Unmanned Aerial Vehicle

JOINT CHEMICAL – BIOLOGICAL – RADIOLOGICAL DEFENSE

Our Mission
In support of the National Military Strategy, research, develop, procure, field, dispose of, and provide sustainment guidance for Collective Protection equipment and systems that protect personnel and equipment within protected areas from chemical, biological, radiological and toxic industrial materials

M2/M3 Bradley Fighting Vehicle

M1 Abrams Tank

MOBILE
Collective Protection Systems

Future Combat System (FCS)

Expeditionary Fighting Vehicle (EFV)

Stryker

Terminal High Altitude Area Defense Weapon System (THAAD)

Patriot Missile Defense

Protection for capital assets such as tracked and wheeled vehicles

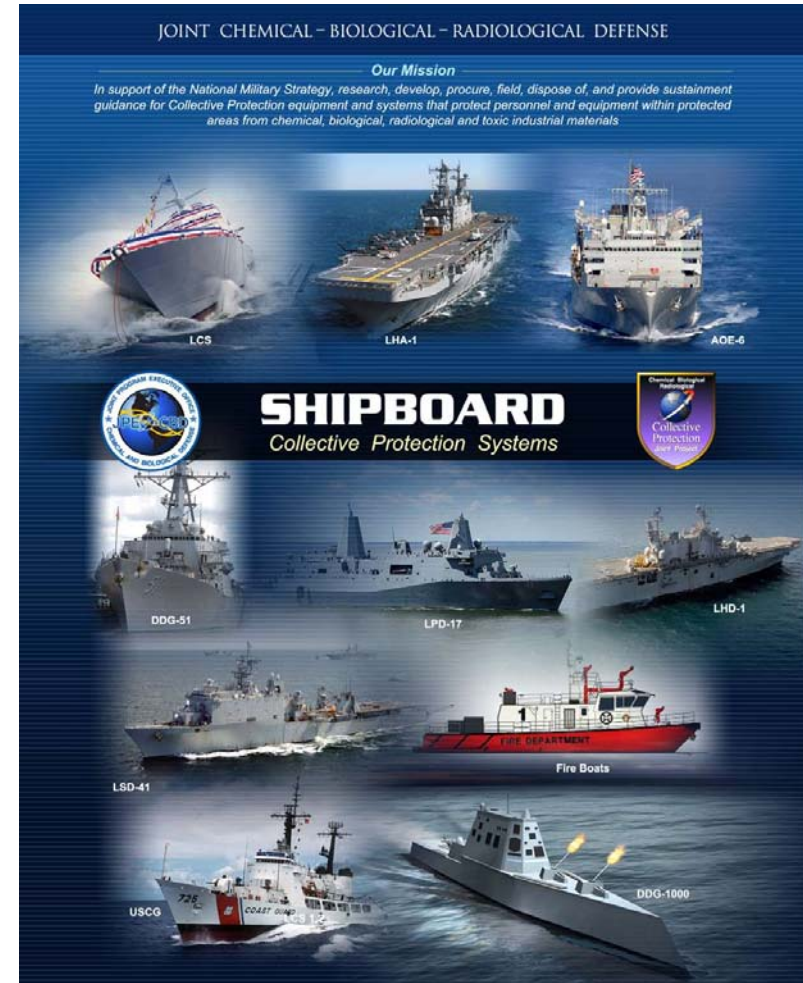


Product Director – Shipboard CPS

Product Director – Mr. Chip Warder, NSWC Z23

SCPS Program Support

- Amphibious Assault Ship Replacement
- Amphibious Transport Dock
- Guided Missile Destroyer/Cruiser
- Joint Maritime Assault Connector
- Littoral Combat Ship



*Protection for capital ships such as destroyers
and the amphibious fleet*



Product Director – Transportable CPS

Product Director – Mr. Steve Beaudoin, NSRDEC

TCPS Program Support

- Ballistic Missile Defense
- Combat Support Hospital Modernization
- Defense Threat Reduction Agency
- Force Provider



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Protection for assets such as field hospitals, tactical command posts, soft and hard shelters



CBRN Purification Threats

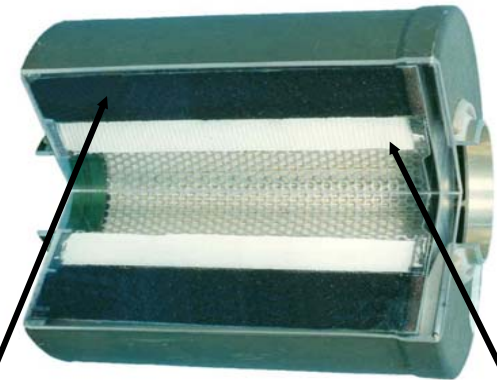
- **Employment Forms**
 - Vapors, aerosols, and particulates.
- **Chemical**
 - Classical Chemical Warfare agents
 - Future agents
 - Toxic Industrial Materials/Toxic Industrial Chemicals
- **Biological**
 - Bacteria, spores, toxins
- **Radiological**
 - Radioactive fallout
 - Dirty Bombs



Single Pass Filtration

- Consists of a combination of high efficiency particulate air (HEPA) filter and a chemically treated carbon adsorbent.
 - ✓ A HEPA removes liquid droplets, aerosols, and solid particulate to an efficiency of 99.97% @ 0.3 microns
 - ✓ Chromium-free activated carbon, impregnated with Copper, Silver, Zinc, Molybdenum, and Triethylenediamine (ASZM-TEDA) removes nerve and mustard agents by adsorption alone and blood agent removal is aided by a reaction with chemicals impregnated on the carbon.
- Capabilities
 - ✓ Simple, low cost system, currently fielded
 - ✓ Protects against classical CBRN agents and some TICs/TIMs
 - ✓ Requires filter change out based on estimated usage

M48 Gas Particulate Filter



Carbon

HEPA



M98 Gas Particulate Filter Set



Air Purification Goals

- Effective against all current and future postulated toxic materials
- Minimal impact to platforms
- Reconfigurable and modular for multitude of platforms
- No/Minimal logistical/maintenance burden

System is TRANSPARENT to the User/PROTECTION is Apparent

PD CBRN Purification Needs

- CBRN Threats
- Integration Needs
- Residual Life Indicator





CBRN Threat Needs

- Purification/Filtration elements with lower pressure drop
- Increased capability against current and evolving CBRN threats to include
 - TICs/TIMs
 - Future agents
- Reduced filter/removal element changeout



Integration Needs

- Designed for Modularity, Component Flexibility, and Tradability
 - Diverse range of applications.
 - No one size fits all
 - Resource Availability is Variable
- Integratable into standard Air Handling Units
- Reduced Size
- Decreased Weight
- Lower cost/easier to manufacture



Residual Life Indicator Needs

- Failsafe (No false alarms)
- Minimal resources required
- Signal easy to observe
- Inexpensive
- Easy to integrate into all filters
- Effective for all agents

PD CBRN Purification System Needs

- **Lightweight**
- **Easy to integrate**
- **Minimal maintenance**
- **Inherent to the host platform**
- **Reduced power**
- **Inexpensive**
- **Variable Speed Motor Blowers**
- **Qualified for entire range of PD platforms operational environments**
- **Adaptable to wide range of platforms**





SUMMARY

- PDs being established as “go to” ColPro source for platforms, for ALL phases of development and sustainment
- Wide diversity of platforms needing ColPro
- Need for CBRN Purification elements with:
 - Increased capabilities
 - Minimal impact to applications
 - Reduced logistical burden



OUR CUSTOMERS



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Contact Information

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