JPEO-CBD

Joint Program Management Office Collective Protection for Chemical & Biological Defense

ColPro 2005

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ColPro JPM
202-781-3741

Chemical Biological Radiological
Collective Protection
Joint Project

Agenda

ColPro Commodity:

- Mission and Functions
- Objectives
- Initiatives
- Accomplishments
- Summary

Why Collective Protection?

CB Defense: A systems of systems

Sustained Combat Power

CB Threats & Hazards

Agent Delivery → Doses on Target → Downwind Dispersal → Doses Absorbed → Symptoms

Medical Pretreatment

Individual & **Collective Protection**

Medical Treatment

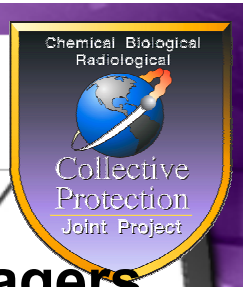
Information Systems

Contamination Avoidance and NBC Battle Management (Detection, Identification, Reconnaissance & Warning)

Installation Force Protection

Decontamination, Restoration

CBD Commodity Alignment



Battlefield Capabilities and Joint Project Managers

Sense

CBRN Detection
- Point
- Stand-off
- Reconnaissance

C4ISR

JPM Biological Detection

JPM NBC Contamination Avoidance

Shape

Battle Analysis
Battle Management
Modeling
Simulation - Training
Integrated Early Warning Medical Surveillance

C4ISR

Shield

Protection
- Percutaneous
- Respiratory
- Ocular

Prophylaxis
- Biological
- Chemical
- Radiological

Collective Protection
- Mobile
- Transportable
- Fixed

C4ISR

Sustain

Decontamination
- Individual
- Equipment
- Fixed Site

JPM Decontamination

JPM Information Systems

JPM Collective Protection

Medical Diagnosis/ Therapeutics
- Chemical
- Biological
- Radiological

JPM CB Medical Systems

JPM CB Medical Systems

JPM Guardian

JPM Individual Protection

Mission

CBR Defense Collective Protection

Research, develop, procure, field and dispose of Collective Protection equipment and systems that protect personnel and equipment from chemical, biological, radiological and toxic industrial contamination within controlled boundaries in support of the National Military Strategy.

What is Collective Protection?

What are the benefits?

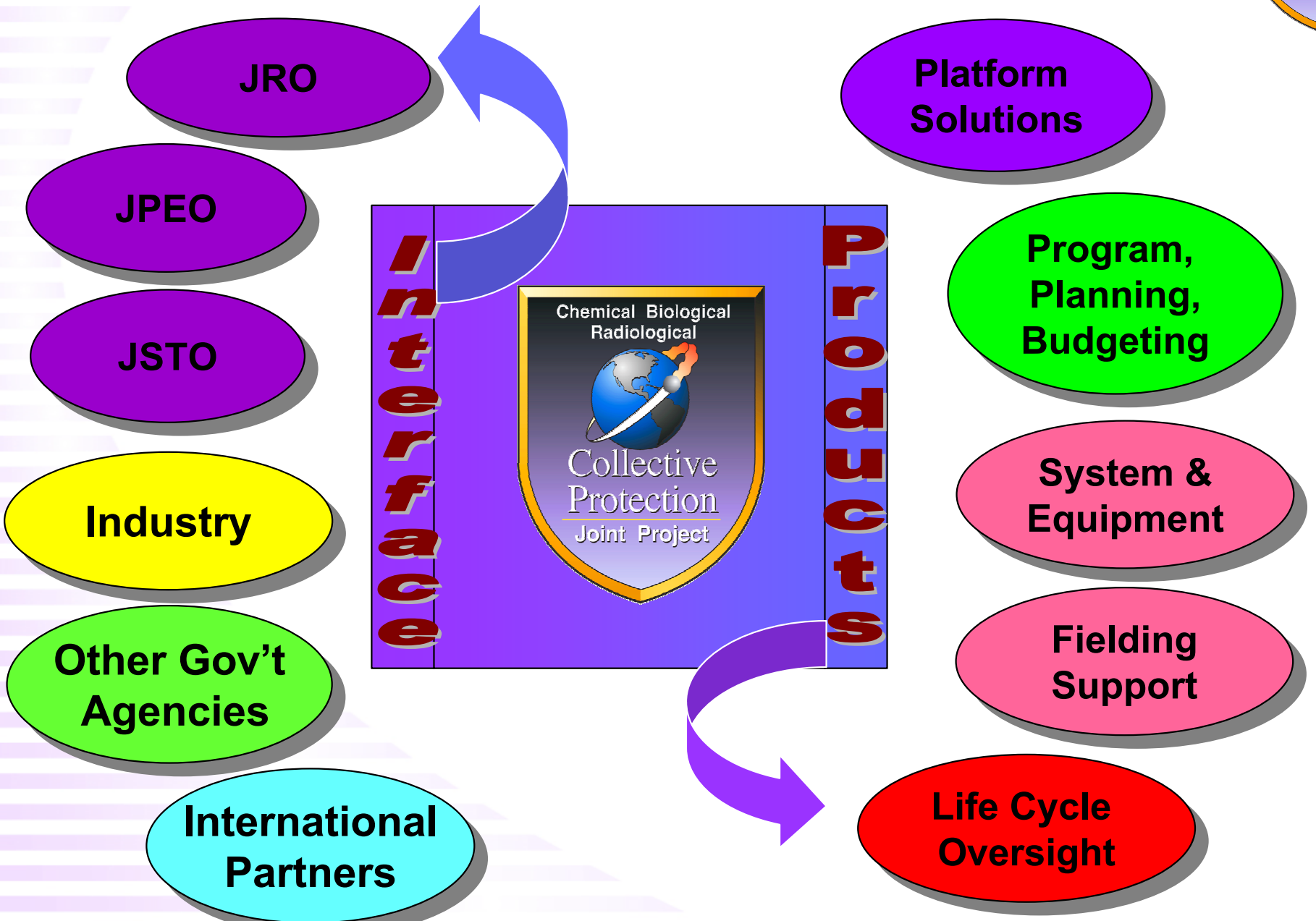
- Protects large number of people
- Protects all contained equipment
- Provides shirt-sleeve environment
- Eliminates breathing apparatus
- Obviates decontamination process
- Reduces cost of clean-up
- Reduces maintenance of electronics
- Provides protection from desert sand storms

Warfighter Needs

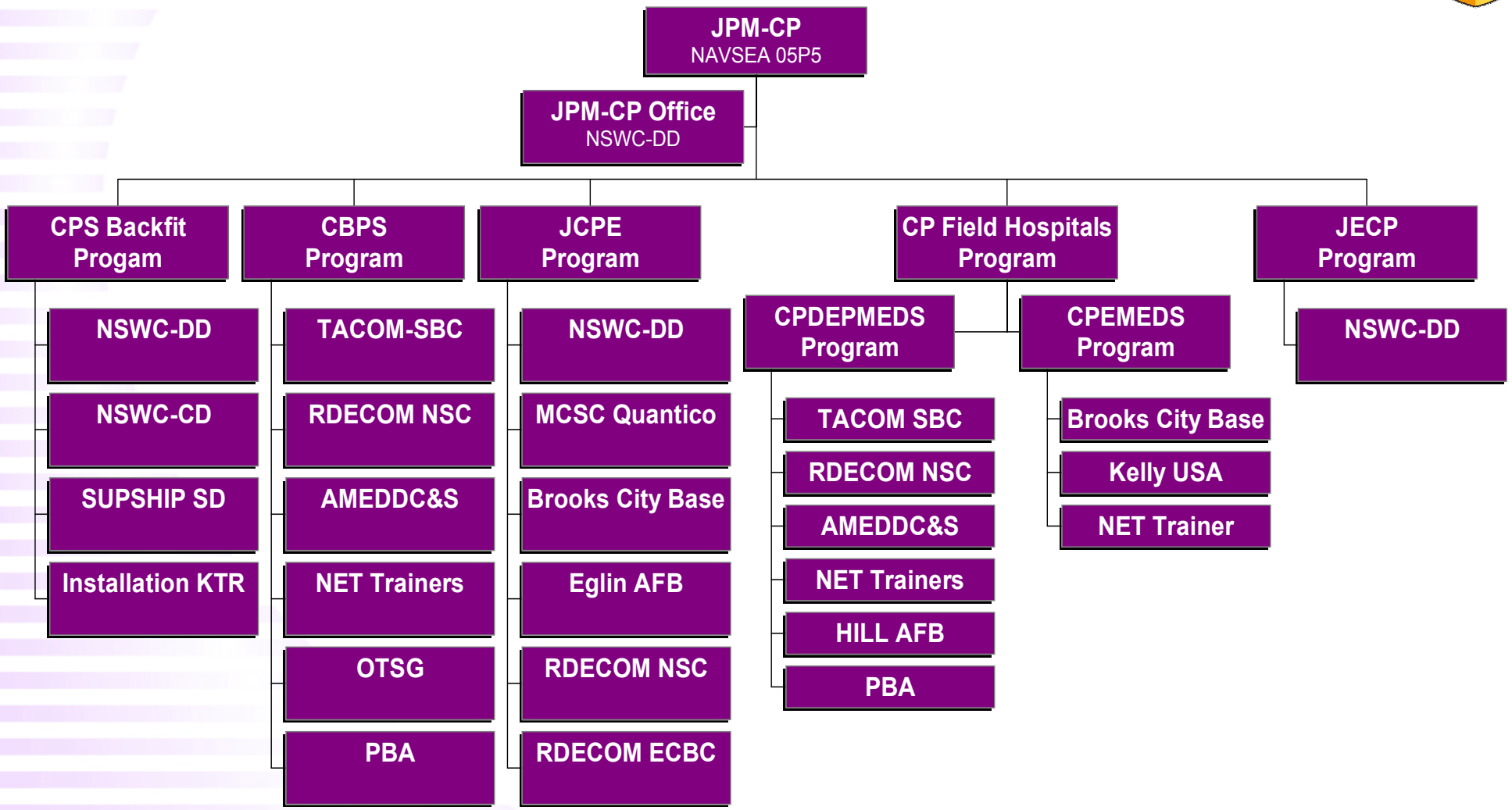
- Lighter, faster and more flexible systems
- Safe operational areas or zones that:
  - Prevents infiltration of contaminated environment
  - Provides clean, breathable air
  - Allows ingress and egress without compromising the protected boundary

- Areas or zones typically protected:
  - Mission critical
  - Command and control
  - Medical care
  - Rest and relief
  - Weapon system control

Centralized Management

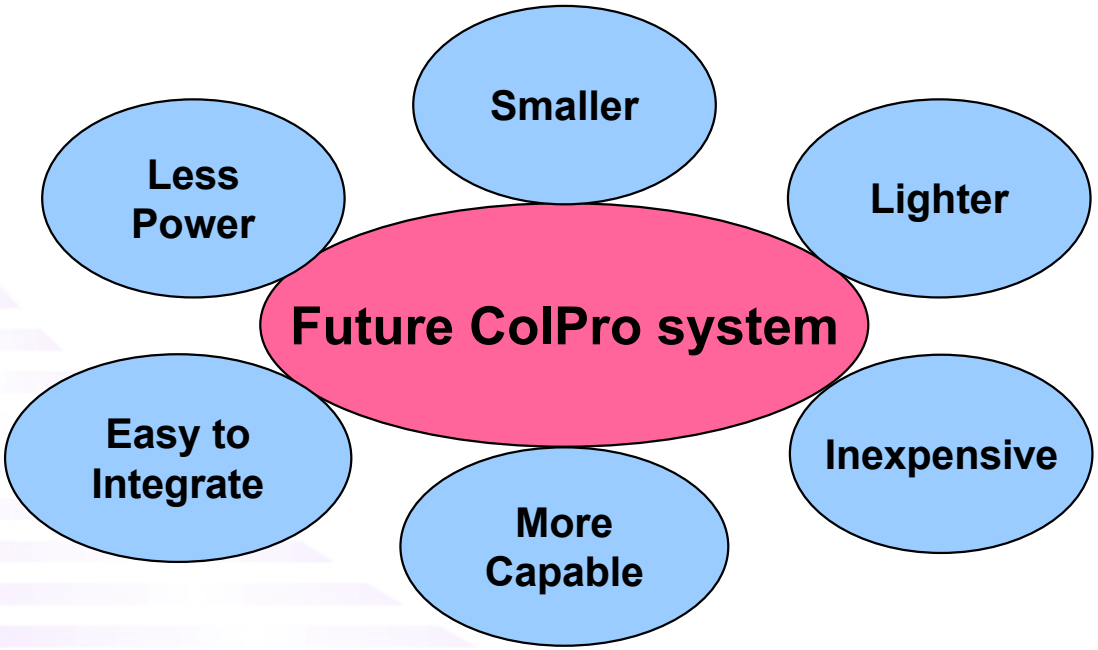


Organization Chart



Technical Challenges

- Evolving threat
- Diverse expeditionary missions
- Multitude of platform interfaces
- Modularity and component flexibility



Near Term Objectives

- Evaluate maturity of COTS and GOTS technologies
  - CP Liners
    - Soft Shelters to include egress and ingress
    - Facilities
  - Air Purification
    - Novel Filtration system
    - Enhance single pass filters
  - Modular ColPro equipment - Lighter / more efficient
    - Environmental Control Units
    - Fan-filter units
- Rapid insertion of new, proven technologies into existing equipment

Mid Term Objectives

- **Systems for expeditionary missions**
  - **Lighter, cheaper, easier to transport and adaptable**
    - **Structure kits**
    - **Portable filtration kits**
    - **Stand alone shelters**
    - **Tent sits**
    - **Portable shelters**
    - **Vehicle shelters/adaptation kits**
- **Develop capability to protection against future warfare threats & TIC/TIM**
- **Supporting domestic critical infrastructure requirements**
- **Integrate ColPro into additional platforms**
  - **Aircraft**
  - **Land Mobile**
  - **Future Ships**
  - **Buildings**

Far Term Objectives

- Integrate ColPro into future Major Defense Acquisition Program platforms
- Field advanced technologies
  - New materials for shelter systems
  - Novel filtration/abatement system
- Standardized equipment across Services
- Retrofit air purifications systems that reduce operating costs
- DoD ColPro integrated with domestic critical infrastructure requirements

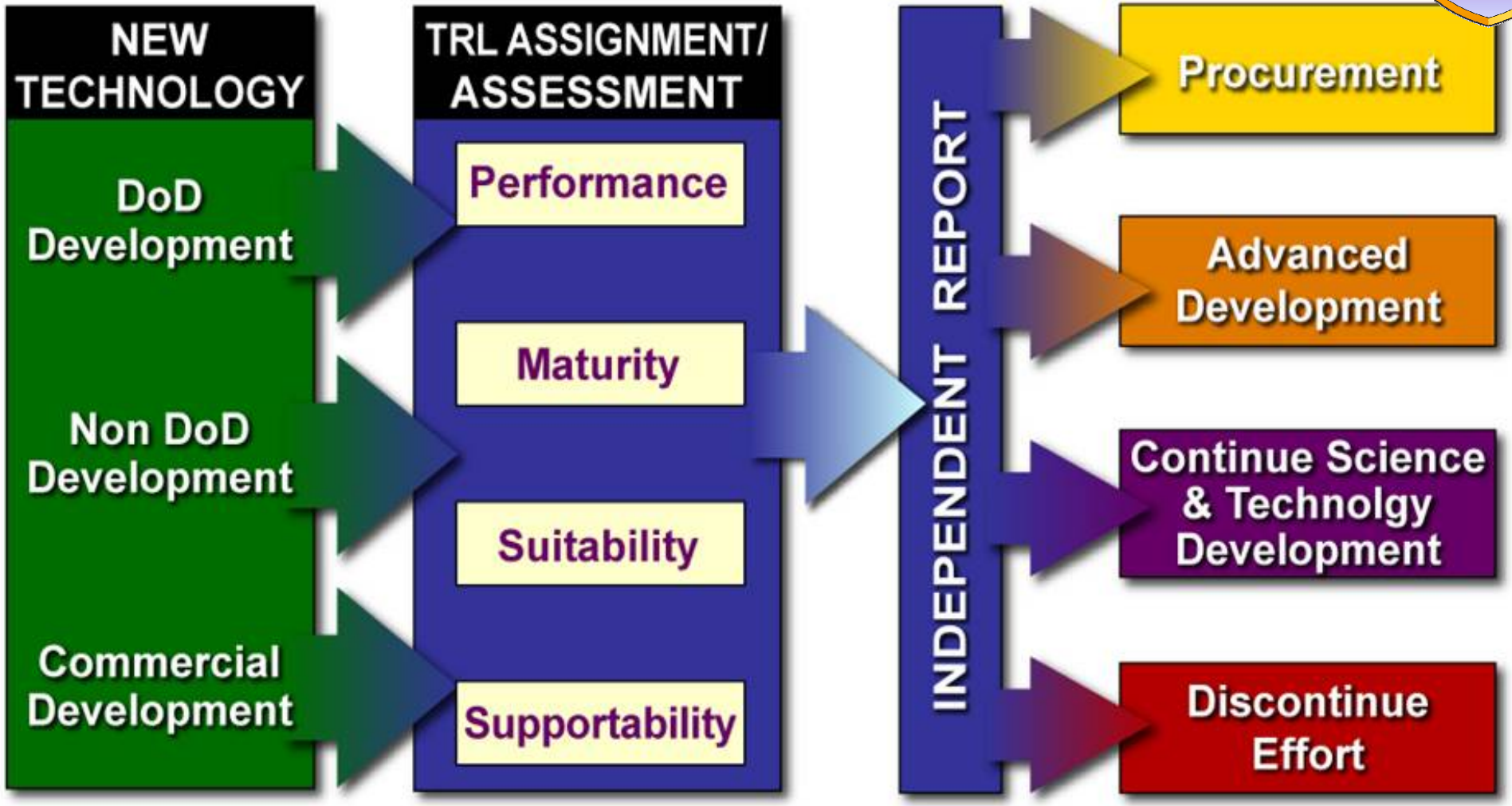
Engineering Initiatives

- Technology Readiness Evaluation FY05/06
- Design solutions for fixed facilities: Support JPM-Guardian Installation Protection Program
- Dialog with joint tactical shelter committee (i.e., JOCOTAS)
- Assist in developing a Unified Facility Criteria
  - UFC 4-012-11 "Security Engineering: Procedures for Designing Airborne Chemical, Biological, and Radiological Protection for Buildings"
  - Guidance for Collective Protection of facilities
    - Design guidance
    - Approved CP equipment requirements
    - Sustainment requirements
    - Design specifications
    - Test and certification

Platform Initiatives

- Joint Expeditionary Collective Protection Program
  - New Joint Acquisition program
- Patriot Missile
  - Upgrade system to address obsolescence
- Expeditionary Fighting Vehicle
  - Develop Regenerative filtration system
- Future Combat System
  - Assist PM UA: Next generation ColPro System
- Littoral Combat Ship
  - Assist PEO Ships: Tailored CP design
- Deep Water Program, US Coast Guard
  - Tailored CP design
- Navy Fleet Hospital
  - Expeditionary design solutions

Technology Readiness Assessments Process



TRAs: Determine State of Technology Against Warfighter Requirements

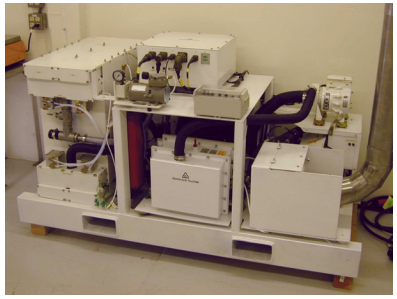
OUTCOMES: Technology Transition/Insertion and/or Procurement

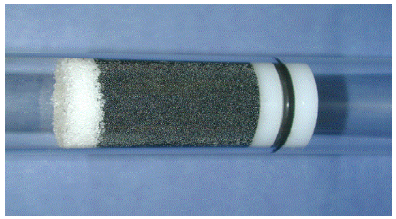
JECP Required Capabilities per ICD

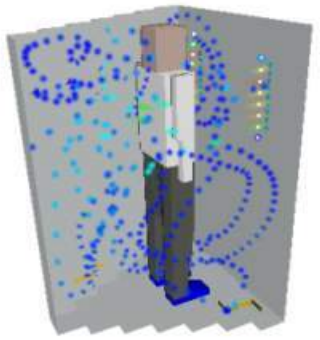
- Full range of protection against traditional CB agents, NTAs and TIC/TIMs
- Operational in all environments and climates
- Easily transportable in a single HMMWV
- Quick erect and strike
- Rapid ingress and egress
- Minimize power requirements and maintenance
- Support Rest & Relief (R2), Command & Control (C2) and Medical Operations
- Allow for technology insertion

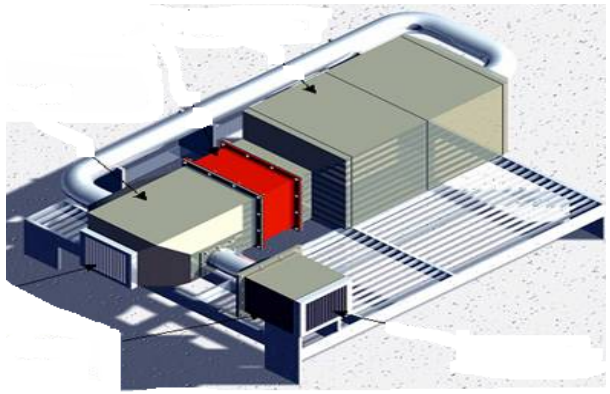
JPM-CP Partnership with S&T

- **Work closely with JSTO CAPO for Protection**
  - **Establish acquisition program needs**
  - **Assist in review and selection of proposals**
- **Transitions mature S&T efforts to fielded applications**
  - **Transportable Systems**
  - **Vehicle Platforms**
  - **Buildings**









Accomplishments

- **Fielded 5 new capabilities for Operation Iraqi Freedom:**

1. **Chemical Biological Protective Shelter (CBPS)**
   - 64 fielded to units in Southwest Asia to meet urgent operational needs.
   - Integrated self-contained system
   - Rapidly deployable, inflates in 3 minutes
   - Fully operational medical facility in < 20 minutes

2. **Chemically Protected Deployable Medical System (CP DEPMEDS)**
   - Six fielded to support field and combat support hospitals. Systems were fielded before OIF commencement.
   - Supports up to 296 patients
   - Uses TEMPER with CB liners, filters and airlocks
   - 72 hour CB mission

Accomplishments (continued)

3. **Collectively Protected Small Shelter System (CPSSS)**
   - 100 systems delivered to CENTAF in support of USAF units.
   - Provides rest and relief, bed-down and command and control
   - Configurations vary, tailored to meet mission needs
   - 32-foot shelter, protects up to 40 people, meets AF SOF requirements

4. **Collectively Protected Expeditionary Medical Systems (CPEMEDS)**
   - Five systems deployed in support of USAF medical units.
   - Emergency medical care for 3000 – 5000 people
   - Configurations vary, tailored to meet medical mission needs
   - Complexed CPSSSs, 25 inpatient beds

Accomplishments (continued)

5. **Collectively Protections Systems, CP for Medium General Purpose Tent System (CP MGPTS)**
   - **145 deployed in support of the USMC medical and command operations centers.**
   - **Toxic Free Area (TFA) – approximately 240 sq. ft.**
   - **Erect in < 30 minutes**
   - **Struck and prepared for transportation in < 60 minutes by four soldiers, in CB protective clothing**

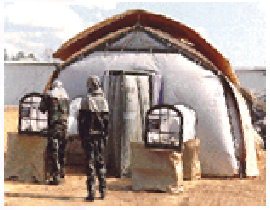
Accomplishments (continued)

- **DDG Class sustainment**
  - Total Protection - All Habitable Spaces
  - Limited Protection – Engine Spaces
- **AOE-6 Class sustainment**
  - Key Rest & Relief Areas
- **Amphibs (LHD, LHA, & LSD)**
  - Rest/Relief Spaces for Flight Crews
  - Medical Complex/Hospital Spaces
  - Command/Control Spaces
  - Casualty & Ambulatory
  - Decontamination Stations
- **National Security Cutter**
  - Maritime Security Cutter-Large (WMSL)

CP Then and Now

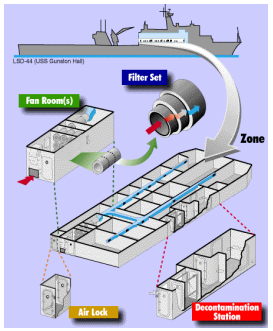
Chemical Biological Radiological
Collective Protection
Joint Project

Desert Storm | **2003** | **2005**

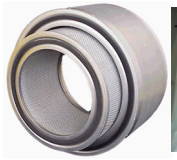


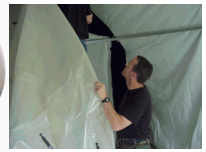
M28 SCPE

M20A1 SCPE



SHIP CPS





JCPE

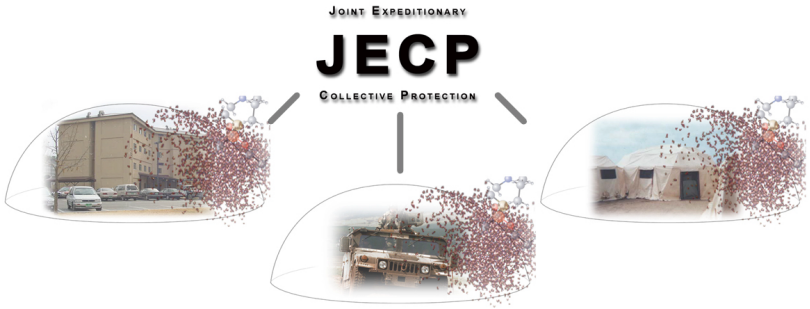
BUILDING CPS

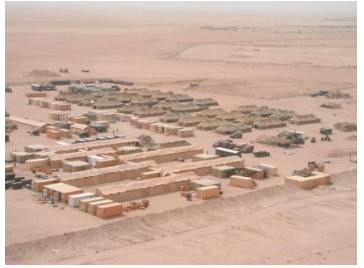
CBPS

CP DEPMEDS

SHIP CPS BACKFIT

CP EMEDS





Navy Fleet Hospital

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