2007 Joint Chemical Biological, Radiological and Nuclear (CBRN)
Conference & Exhibition

"Combating Weapons of Mass Destruction"
25-27 June 2007

Fort Leonard Wood, MO

Onsite Agenda

Tuesday, June 26, 2007

Chief of Chemical Welcome – *Brigadier General Thomas Spoehr, USA Commandant, US Army Chemical School*

Keynote Address - *Mr. Jean Reed, Special Assistant, Chemical and Biological Defense and Chemical Demilitarization Programs, in the Office of the Assistant to the Secretary of Defense*

Session 2a: Joint Chemical Biological Defense *Baker Theater*

- *Major General Larry New, USAF Director, Joint Requirements Office*

Session 1b: Homeland Defense *Baker Theater*

- *Brigadier General Kevin Wendel, USA, CG, 20th SUPCOM (CBRNE)*
    - Radiation Systems Evolution, *Colonel Richard Whitman, USA (Ret) Radiation Safety Officer, US Customs and Border Protection*

Wednesday, June 27, 2007

Session 2b: Joint Chemical Biological Defense - *Baker Theater*

- *Dr. Darrell Galloway Director, Joint Science and Technology Office for Chemical and Biological Defense, DTRA*
    - *Major General Stephen Reeves, USA, Joint Program Executive Officer for Chemical and Biological Defense*

2007 JOINT CBRN CONFERENCE & EXHIBITION

June 25 – 27, 2007
Fort Leonard Wood, MO

Joint CBRN Conference & Exhibition

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Achieving DoD's Full Spectrum Capabilities

Proliferation of the capability for nations and terrorist organizations to employ CBRN weapons on the battlefield or against American citizens in the homeland and overseas makes the government's role in the defense of our country from CBRN threats and effects more vital than ever before. It is important for the CBRN community, the military and civilian employees of the Services and other government agencies, our international partners, contractors, industry, and academia to come together and share information about our capabilities to defend against CBRN and our requirements for the future.

The Joint CBRN Conference & Exhibition does that.

AGENDA

Monday, June 25, 2007

7am - 3pm	Conference Set-up
3pm - 7pm	Registration/Exhibits Open *Exhibit Pavilion*
5:30pm - 7pm	NDIA Reception *Exhibit Pavilion*

Tuesday, June 26, 2007

7:30am - 9am	Registration and Continental Breakfast *Exhibit Pavilion*
7:30am - 4pm	Exhibits Open *Exhibit Pavilion*
9:20am - 9:30am	Opening Ceremonies *Baker Theater*

NDIA Welcome
BG Dean Ertwine, USA (Ret)
Chairman, NDIA Chem Bio Division

MANSCEN Welcome
MG William McCoy, USA
Commanding General, US Army Maneuver Support Center

Chief of Chemical Welcome
BG Thomas Spoehr, USA
Commandant, US Army Chemical School

Tuesday, June 26, 2007 (cont.)

9:30am - 10:10am	**Keynote Address** *Mr. Jean Reed* *Special Assistant, Chemical and Biological Defense and Chemical Demilitarization Programs, in the Office of the Assistant to the Secretary of Defense*
10:10am - 11:30am	**Session 1a: Homeland Defense** *Baker Theater*
10:10am - 10:50am	*Mr. Chuck Gallaway* *Department of Homeland Security*
10:50am - 11:30am	**Session 2a: Joint Chemical Biological Defense** *Baker Theater*
10:50am - 11:30am	*Maj Gen Larry New, USAF* *Director, Joint Requirements Office*
11:30am - 1:30pm	**Lunch** *Exhibit Pavilion*
1:30pm - 3pm	**Session 1b: Homeland Defense** *Baker Theater*
1:30pm - 2pm	*COL Joseph Bassani, USA* *Chief of Plans, NORTHCOM*
2pm - 2:30pm	*BG Kevin Wendel, USA* *CG, 20th SUPCOM (CBRNE)*
2:30pm - 3pm	Radiation Systems Evolution *COL Richard Whitman, USA (Ret)* *Radiation Safety Officer, US Customs and Border Protection*
3pm	Closing Comments, Day 1 *BG Dean Ertwine, USA (Ret)*

Wednesday, June 27, 2007

7:30am - 9am	Registration and Continental Breakfast *Exhibit Pavilion*
7:30am - 4pm	Exhibits Open *Exhibit Pavilion*
8:45am	Opening Comments *BG Dean Ertwine, USA (Ret)* *Chairman, NDIA Chem Bio Division*
8:50am - 9:30am	**Keynote Address** *Mr. Joseph Benkert* *Principal Deputy, ASD for Global Security Affairs*
9:30am - 11am	**Session 2b: Joint Chemical Biological Defense** *Baker Theater*
9:30am - 10am	*BG Thomas Spoehr, USA* *Commandant USACMLS/Dir Joint Combat Developments*
10am - 10:30am	*Dr. Darrell Galloway* *Director, Joint Science and Technology Office for Chemical and Biological Defense, DTRA*
10:30am - 11am	*MG Reeves, USA* *Joint Program Executive Officer for Chemical and Biological Defense*
11am	Closing Comments for Baker Theater Presentations *BG Dean Ertwine, USA (Ret)*

Wednesday, June 27, 2007 (cont.)

11:10am - 11:30am	JPEO CBD Demonstration *Outside Baker Theater*
11:30am - 1:30pm	**Lunch** *Exhibit Pavilion*
1:30pm - 4pm	Demonstrations
4pm	Conference and Exhibits Close

"The Department of Defense finds this event meets the minimum regulatory standards for attendance by DoD employees. This finding does not constitute a blanket approval or endorsement for attendance. Individual DoD Component commands or organizations are responsible for approving attendance of its DoD employees based on mission requirements and DoD regulations."

For up-to-date conference information, visit http://www.ndia.org/meetings/7300

Exhibits Pavilion

(Including outdoor booths)

Company Name	Booth #
Advanced Measurement Technology	617
AdVnt Biotechnologies	102
Ahurea Scientific, Inc.	202
Air Technologies International	512
Alexeter Technologies	501
Allen-Vanguard	201
Alluviam LLC	419
ANP Technologies, Inc.	706
Argon Electronics	406
Arista Tek Inc.	119
Avon Protection Systems, Inc.	402
BAE Systems	900
Base-X Inc	704
Battelle	304 & 306
Boeing	625
Brimrose Corporation of America	312
Bruker Daltonics NBC Detection Corp.	504
Canberra Industries	320
CBRNe World	708
CBRNIAC	417
Chemical Corps Regimental Assocation	626
Coalescent Technologies	606
Concurrent Technologies Corp.	714
Constellation Technology	123 & 125
Defense Group, Inc.	427
DHS Systems, LLC (DRASH)	1005
Draeger Safety, Inc.	701
DriLet America/ PDA LLC	206
DRS Sustainment Systems, Inc.	16 & 107
Dycor Technologies Ltd.	225
EAI/SAIC	210
EG&G DMI	222
E-Z-EM, Inc.	109
First Line Technology	609
Foster Miller Inc.	226
Genencor	404

Company Name	Booth #
General Dynamics - ATP	111
Gentex Corporation	423
Global Ground Support	112
Global Protection	601
Hunter Manufacturing Company	209
ICx Technologies	410
IEM	524
INFICON	317
Innovative Biosensors, Inc.	110
Intelagard, Inc.	702
iRobot Corporation	603
ITT AES	610
Joint Equipment Assessment Program	722
JPEO for Chem Bio Defense	9 & 418
Kalman & Company, Inc.	124
Kokatat, Inc.	720
Lockheed Martin	503
L-3	15
MacAulay-Brown, Inc	220
Medical Mobile International	1037
Military Medical Technology	126
Milliken & Company	623
Missouri State University	712
Mobile Medical	1037
Morphix Technologies	502
MSA	121
NanoScale Materials, Inc.	203
National Guard Bureau	127
NNSA's Kansas City Plant	604
Northrop Grumman	3 & 618
Nucsafe, Inc.	318
Oak Ridge National Laboratory	611
Ol Analytical/CMS Field Products	128
Omni/RFD Beaufort	724
OptiMetrics, Inc.	526
Paul Boye Technologies	217
Pine Bluff Arsenal	428
Production Products	324

Company Name	Booth #
Proengin Inc	205
Pursuit Dynamics Inc.	710
QuickSilver Analytics, Inc.	510
RADeCO, Inc	310
RAE Systems	118
Remploy Frontline	106
Rohm and Haas Company	305
SafetyTech International, Inc.	518
Sceptor Industries, Inc.	218
Scientific Services Program	602
Scot Incorporated	204
Scott Specialty Gases	302
Signature Science, LLC	705
Smiths Detection	401
STERIS Corp.	1031
Tex-Shield, Inc.	409
Thermo Fisher Scientific	227
TSI Incorporated	223
TVI Corporation	7
U.S. Army ECBC	326
Ultra Electronics Audiopack	101
US Army Dugway Proving Ground	219
USAA	103
USAES-DEI	319
Utilis USA	105
W.L. Gore & Associates, Inc.	619
Wel-Fab, Inc.	301
Y-12 National Security Complex	718

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DEFINING THE FUTURE

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CBRN PROTECTION

Joint CBRN Combat Developer

U.S. Army Chemical School

BG Tom Spoehr

Briefing for JCBRN Conference

26 June 2007

Agenda

- Mission
- Authority
- Process
- Joint CBRN Combat Developer
  - Joint Experimentation and Analysis
  - Joint Threat Support
- Doctrine Support
- Training Support
- Operational Update
- Transformation

Mission

Conduct experiments for the Department of Defense's Chemical and Biological Defense Program by systematically exploring new and innovative combinations of medical and non-medical Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) capabilities.

to reduce risk in materiel development

Authority

Implementation Plan for the Management of the Joint Chemical Biological Defense Program

dated: 22 April 2003

"*Para 3.4.8 -Through the JRO, serve as the Joint Combat Developer for the CBDP*"

Process

CBDP Process

- Combatant Commanders
- Services

ATSD(NCB) Oversight

Joint Requirements Office (JRO)

Required Capabilities

Capability Needs

Prioritized Needs

Test & Evaluation Executive

Joint Combat Developer

Joint Science & Technology Office for CB Defense

Science &Tech Gaps

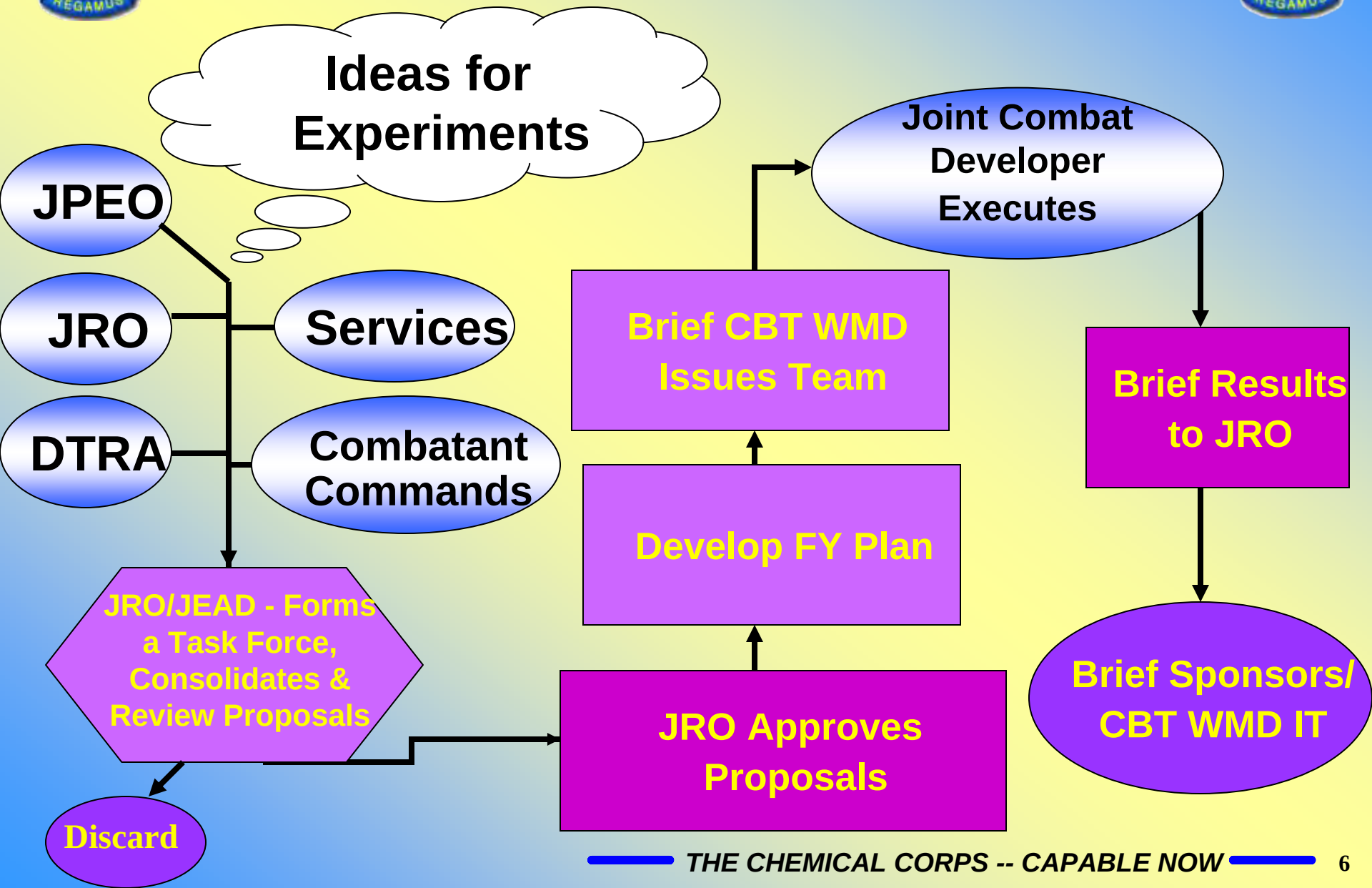
Joint Program Executive Office (JPEO)

Capabilities to the Warfighter for All Missions

Mature Technologies

Process based on managing total program risk

Experimentation Process



Joint Experimentation and Analysis

JEAD Completed Experiments

- **Sensitive Equipment Decon** - Validate Concept of Operations & Key Performance Parameters (Completed FY05, Final Report dated 31 Oct 05)
- **Split MOPP** – Validate USAF Concept of Operations for Fixed Sites (Completed FY05, Final Report dated 9 Dec 05)
- **Aerial CBRN Sensing** – Develop & validate Concept of Operations (DTRA Funded, Final Report dated Jul 06)
- **Cold Weather Decon** – Validate cold weather tactics, techniques and procedures for WMD-CSTs (NGB Funded, Final Report dated June 07)

JEAD On-Going Experiments

- **WMD-CST LOE** – Validate CST TDA (HLS funded, draft report in staffing)
- **Air Crew Duration** – Validate TTPs and safety requirements (JRO/JPEO funding, TRANSCOM nominated)
- **Joint CBRN Dismountable Recon System** – Validate organization & equipment for CPD (JPEO Experiment, Live Sea Phase May 07, draft ground phase report in staffing)
- **Joint Expeditionary Collective Protection** – Develop/validate Ingress/Egress TTPs (JPEO experiment, draft report in staffing)
- **Mortuary Affairs/Human Remains Decon System Rock Drill** – Develop CONOPS (JPEO/JPM Decon Funded, CASCOM supported, draft report dated May 07)
- **CBRN Recon Experiment** – TIC/PDE Load-Out Experiment (HS Funded, Live Experiment May 07)

Joint CBRN Dismountable Recon System

- **Objective:** Examine whether the JCDRS demonstrates an improved capability to conduct CBR dismounted reconnaissance missions, has the capability to detect and identify hazardous material, if TTPs are adequate and effective, and whether existing organizational assets are sufficient.
- **JPEO** Funded, JPM-CA, JPM-IP supported
- **Location:** Aberdeen MD, Norfolk, VA
- **Recommendations:** DOTMLPF recommendations are identified in the report.
- **Result:** JCDRS offers new capability to detect and identify more substances during dismounted recon and SSA missions. Services demonstrated they could accomplish missions with their planned organization.

Joint Expeditionary Collective Protection

- **Objective:** Investigate the capability of warfighters to follow TTPs for entry/exit, potential throughput, capability of SOF non-powered shelters, and utilization of a CCA outside the airlock,
- **JPEO** Funded
- **Location:** Eglin Air Force Base, FL
- **Recommendations:** Changes to Doctrine, Organization level at which shelters will be used should be examined, Attendants are needed to support ingress/egress, Training on conducting TTPs is simple, Materiel changes may be required.
- **Result:** Processing into JECP requires three distinct functions, Throughput is limited by the time takes for the functions, TTP's were modified and are now adequate

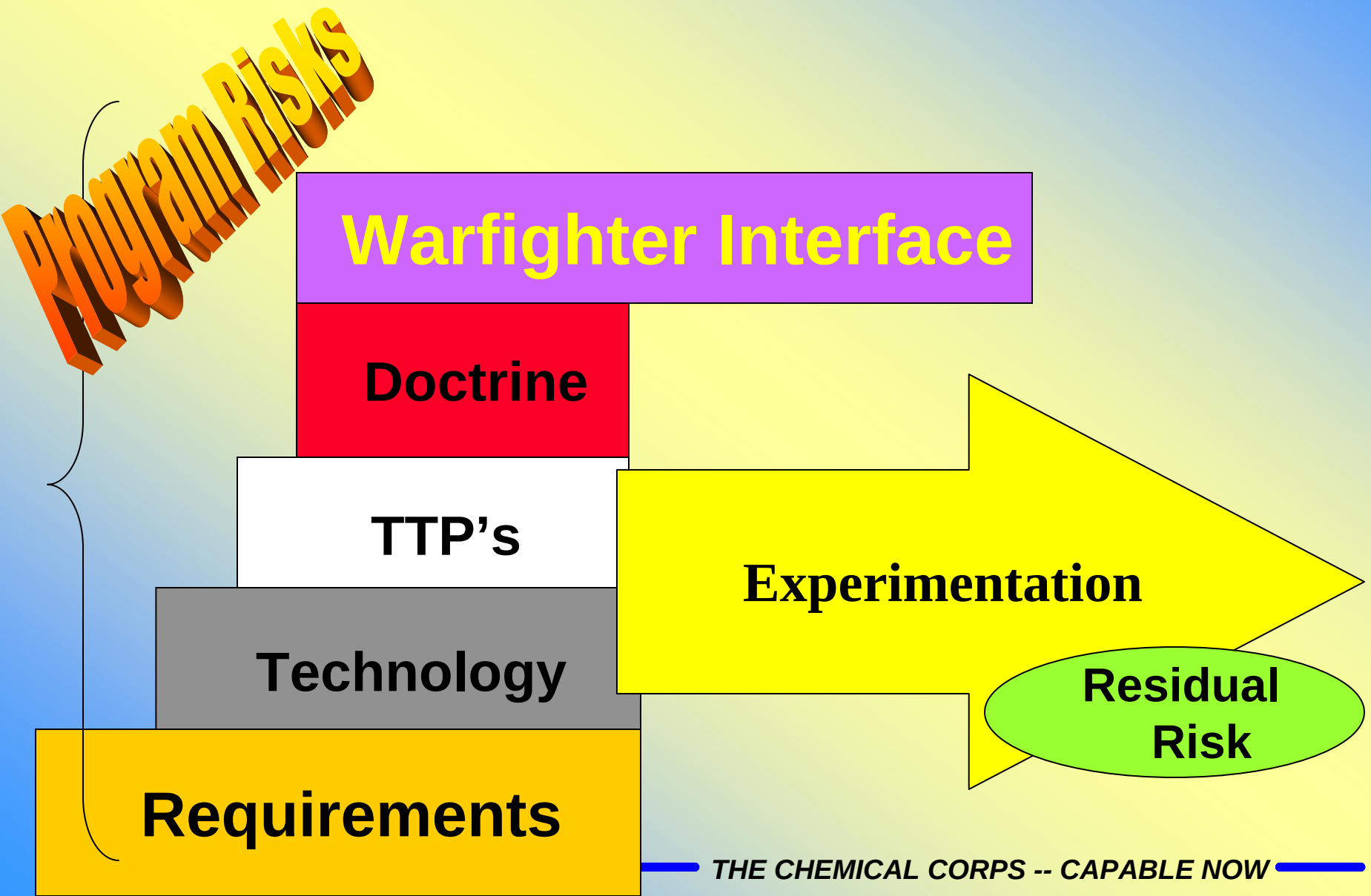
Mortuary Affairs Human Remains Decontamination

- **Objective:** Define the end-to-end Mortuary Affairs process for handling chemically contaminated remains from point of death to CONUS. ID organizational roles, C2, capabilities, processes and procedures necessary, and ID issues for resolution at a higher level.
- **JPEO,** JPM Decon Funded, CASCOM Supported
- **Location:** Fort Lee, VA
- **Recommendations:** DOTMLPF recommendations are identified in the report.
- **Result:** Developed a proposed end-to-end process, Defined requirement for intra-theater contaminated remains container, Identified organizational roles and issues for resolution at a higher level.

JEAD Future Experiments

- **Sensitive Site Exploitation** – Develop & validate Concept of Operations
- **Standoff Chemical Agent Detection** – Validate CONOPS (USMC nominated)
- **Automation/Robotic Decontamination** – Develop & validate Concept of Operations and Tactics, Techniques and Procedures
- **Near and Long Term User Needs Development for Improving CBRN Contamination Assessment, and Decontamination** – Concept of Operations/Requirements Needs

Value Added of the Joint Experimentation and Analysis Division



Joint Threat Support

JTSB Foundation

Mission: Develop and coordinate intelligence & threat support products as required by CBRND acquisition programs and experimentation**.**

Authority: JTSB chartered under the Joint Combat Developer-Chemical Biological Radiological Nuclear Defense (JCD-CBRND) October 2005.

- In support of Commandant USACMLS as Joint Combat Developer
- Charter 1st anniversary review pending signature.

Scope:

- Joint Chemical Biological Defense acquisition programs and experimentation

- Highest Priority: Director Operational Test & Evaluation Oversight Programs

JTSB FY07 Production & Status

Program	Product	Event Supported	Status
Joint Chemical Agent Detector	System Threat Assessment Report (STAR)	Milestone Decision Review (MDR) C	Approved
Joint Service Lightweight Nuclear Biological Chemical Reconnaissance System	Joint Threat Test Support Package (JTTSP)	Multi-service Operational Test & Evaluation (MOT&E)	Approved
Joint Chemical Biological Defense Program (JCBPD) Information Systems (Battle Management	STAR	Joint Warning Network (JWARN), Joint Effects Model (JEM) & Joint Operational Effects Federation (JOEF) MDRs	Approved
Joint Chemical Agent Detector	JTTSP	Operational Analysis & MOT&E	Approved
Joint Chemical Biological Radiological Agent Water Monitor (JCBRAWM)	STAR	MDR	Service Comment Adjudication Review
Joint Expeditionary Collective Protection	STAR	MDR	Service Commend Adjudication Review

JTSB FY07 Production & Status (Cont'd)

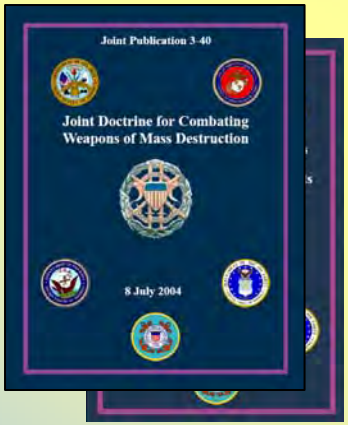
Program	Product	Event Supported	Status
JCBDP Decontamination Systems	STAR	MDRs	Pending Service Review & Comment
JCBDP Individual Protective Equipment	STAR	MDRs	Pending Service Review & Comment
Joint Biological Point Detection System (JBPDS) & Joint Biological Standoff Detection System (JBSDS)	STAR	MDRs	Post-Threat Working Group (TWG) Edits
JBPDS	JTTSP	MOT&E Phase VI	Post-TWG Edits
JCBRAWM	JTTSP	Program Test & Evaluation Cycle	Post-TWG Edits
JCBDP Information Systems (Battle Management	JTTSP	MOT&E	Pending T&E Threat Requirement Determination

Value Added of the JTSB

- One-stop-shop for JCBDP threat analysis.
- Acquisition lifecycle threat intelligence support, from requirements determination to fielding.
- Standardized threat support to counter disparities in service policies & procedures.
- Adapted procedures for support to all programs, exceeding the requirements of the JTSB Charter.

Doctrine Support to the Joint CBRN Force

Doctrine (1 of 3)

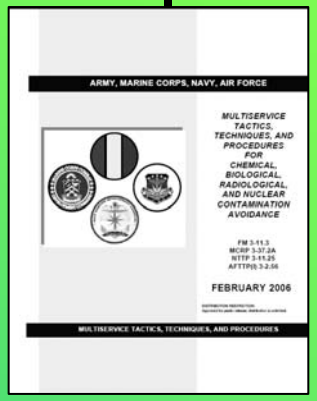


Combating WMD (JP 3-40)

Operations in CBRN Environments (JP 3-11)

CBRN Operations (capstone manual)

WMD Elimination



CBRN Contamination Avoidance (Sense)

CBRN Protection (Shield)

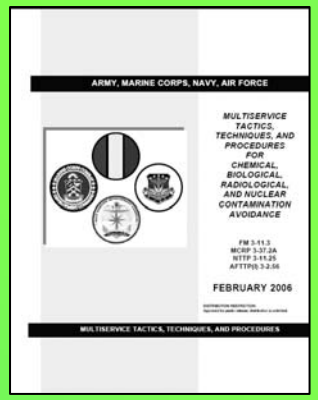
CBRN Decontamination (Sustain)

CBRN Command & Control (Shape)

CBRN Consequence Management

Doctrine (2 of 3)

WMD Elimination



CBRN Contamination Avoidance (Sense)

CBRN Protection (Shield)

CBRN Decontamination (Sustain)

CBRN Command & Control (Shape)

CBRN Consequence Management

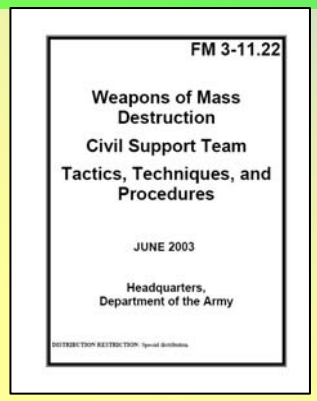
Technical Escort Operations

CBRN Recon & Bio Surveillance

Installation CBRN Defense

Vulnerability Assessment

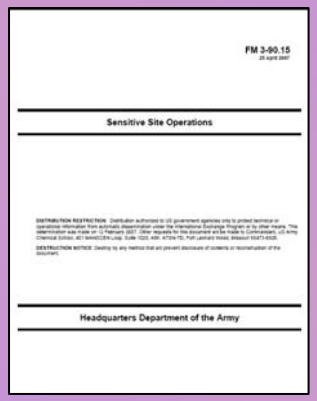
CB Agents and Compounds



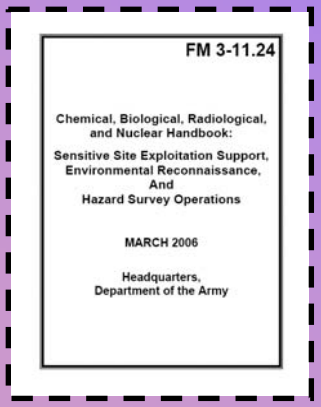
WMD-CST Operations

Doctrine (3 of 3)

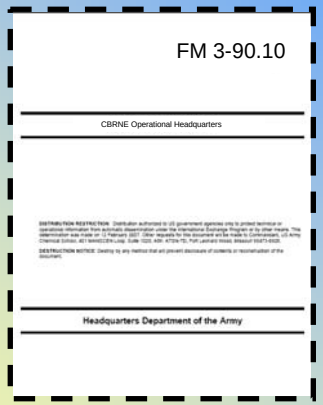
Becoming Joint



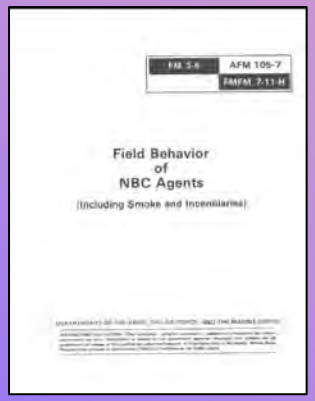
SSE



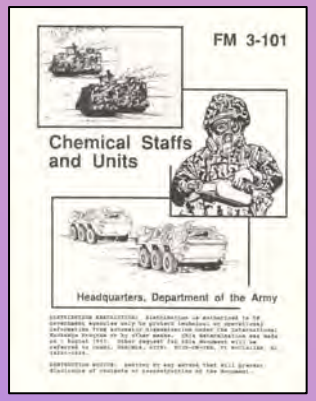
CBRN Site Assessment



CBRNE Operational Headquarters



Field Behavior



Chemical Staffs and Units

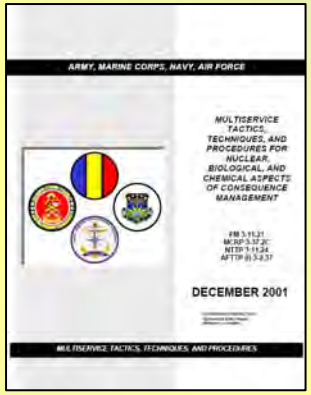
Smoke Operations

CONSEQUENCE MANAGEMENT

PUBLICATION

FM 3-11.21

"CBRN Consequence Management Operations"



STATUS:

- Current version Dec 01
- J-8 sponsored
- Under revision FY06
- Final draft complete Jun 07
- Staffing complete (all Services)

WAY AHEAD:

- Multi-Service work group May 07
- Mass casualty decontamination exercises (May-Aug 07)
- Final approval NLT Oct 07
- Electronic publishing Dec 07

REMARKS:

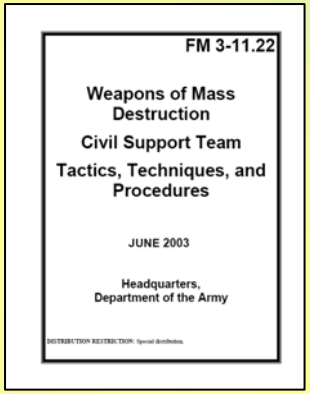
- Emphasis on the National Response Plan *(CBRN Responders)*
- Linked to the joint capabilities study for WMD Consequence Management
- Synchronized with joint doctrine for CBRNE consequence management
- Domestic reconnaissance and casualty decontamination (DRCD)
- National guard CBRNE Enhanced Response Force Package (CERFP)
- Multi-Service tactical publication

WMD CIVIL SUPPORT TEAMS

PUBLICATION

FM 3-11.22

"WMD Civil Support Team (WMD CST) Operations"


FM 3-11.22

Weapons of Mass Destruction

Civil Support Team

Tactics, Techniques, and Procedures

JUNE 2003

Headquarters, Department of the Army

STATUS:

- Current version Jun 03
- Under revision FY06
- Internally resourced
- Final draft complete (NGB)
- Final edit in progress

WAY AHEAD:

- Signature draft complete 2QTR FY07
- Final approval 3QTR FY07
- Electronic publishing 4QTR FY07

REMARKS:

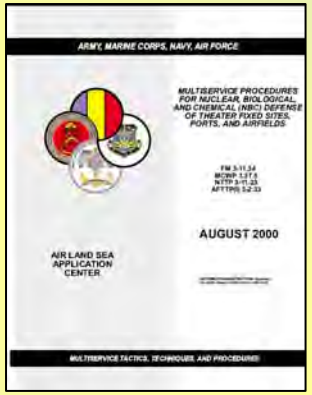
- Revision implements lessons learned from Hurricane Katrina
- Revision incorporates WMD CST emerging capabilities for homeland security
- Partnership with the National Guard Bureau (NGB)
- Army publication

INSTALLATION DEFENSE

PUBLICATION

FM 3-11.34

"Installation CBRN Defense Operations"



STATUS:

- Current version Aug 2000
- J-8 sponsored
- Under revision FY05
- Final draft complete
- Final edit in progress

WAY AHEAD:

- Electronic publishing 3d QTR FY07

REMARKS:

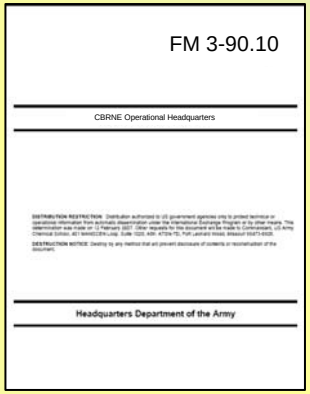
- Tied to the National Response Plan with links to consequence management
- Scope expanded to include CONUS-based military installations (all Services)
- Integrated with ATSD-NCB study for CBRNE Installation Protection
- Synchronized with the Joint Program Manager (Guardian) acquisition strategy
- Multi-Service publication

20TH SUPCOM (CBRNE)

PUBLICATION

FMI 3-90.10

"CBRNE Operational Headquarters"


FM 3-90.10

CBRNE Operational Headquarters

Headquarters Department of the Army

STATUS:

- **Initial Draft complete Apr 07**
- **Staffing in progress (Army wide)**
- **Key stakeholder staffing (Joint)**

WAY AHEAD:

- **Use draft doctrine for JOCEX (Jul 07)**
- **Validate during UFL (Aug 07)**
- **Validation input complete (Sep 07)**
- **Complete final draft (Nov 07)**
- **Publish FMI (Dec 07)**

REMARKS:

- **Interim Field Manual**
- **Doctrine built upon approved O&O**
- **Implements JTF Elimination Handbook**
- **Develops WMD-E operational and tactical tasks**
- **Addresses JTF headquarters capability**
- **Includes a Combating WMD primer**

Training Support to Joint CBRN Force

Functional Training (WMD-CST)

COURSES

- Civil Support Skills Course (8w)
- CST Operations Course (1w)
- Analytical Laboratory System (ALS) Course (5w)
- Unified Command Suite (UCS) Course (4w)
- CST Pre-Command Course (1w)

STATUS

- CST Operations Pilot May 2007
- ALS course validated and is being conducted now at Bluegrass, KY
- UCS Course is anticipated to be institutionalized in FY08
- Trained over 200 Civil Support Team personnel in 2006

REMARKS

- Civil Support Skills Course specifically designed to support domestic mission
- Civil Support Skills Course has received overwhelming positive feedback from CST students
- Courses are designed to be Joint/multi-agency focused

FUNCTIONAL TRAINING

USAR Domestic Response & Casualty Decontamination (DRCD)

COURSES

CBRN Responder Course (2w)
Mass Casualty Decontamination Course (1w,3d)

STATUS

- **CBRN Responder under-going 2nd validation**
- **Mass Casualty Decon pilot completed March 2007**

REMARKS

- **Courses designed to support Defense Reform Initiative Directive 25 to improve military support for WMD incidents**
- **Courses designed to support reserve component 14 day active training cycle**
- **CBRN Responder Course includes emergency response competencies, site entry, sampling, and specialized equipment**
- **Can support CERFP individual training requirements**

Functional Training

COURSES

Radiation Safe
OPRAD Safe
BIDS (P3I and JBPDS)
Technical Escort (moving to 4w 3d)
NBCRV (Stryker L6)

STATUS

- Updated all legacy courses
- Updated TE course pilot (Aug07)
- Radiation courseware updated to include lessons learned from OIF
- 1st L6 Course March 08

REMARKS

- Courses designed to complement full spectrum operations
- All course revisions are based on feedback from the field

Operational Update

Dangerous Times

Operational Update

OIF LTC Allen/SGM Hill
Chemical Units Assigned

- ✓Tech Escort Detachment
- ✓1/329 Recon Plt
- ✓4/181 S/D Plt
- ✓1 CD 4 Recon Plts (Fox)
- ✓3/25 ID Recon Plt
- ✓4/25 ID Recon Plt
- ✓2/2 ID Recon Plt
- ✓3/2 ID Recon Plt (Fox)
- ✓4/2 ID Recon Plt (SNBCRV)
- ✓2/10 ID Recon Plt
- ✓3/82 ABN Recon Plt
- ✓1/3 ID Recon Plt
- ✓2/3 ID Recon Plt (Fox)
- ✓3/3 ID Recon Plt
- ✓4/1 ID Recon Plt
- ✓790th CM Co

OEF LTC Fisher/SGM Velarde
Chemical Units Assigned

- ✓23d CML BN (-)
  - HQ
  - 61st CM Co
  - 62nd Cm Co
- ✓ 4/82 ABN Recon Plt
- ✓ 3/10 MNT Recon Plt
- ✓ 26th CRD

Kuwait/CFLCC
LTC Bober/SGM McKenzie
Chemical Units Assigned

- ✓ 44th Chemical Company
- ✓ 7th Chemical Company

Chemical Staffs

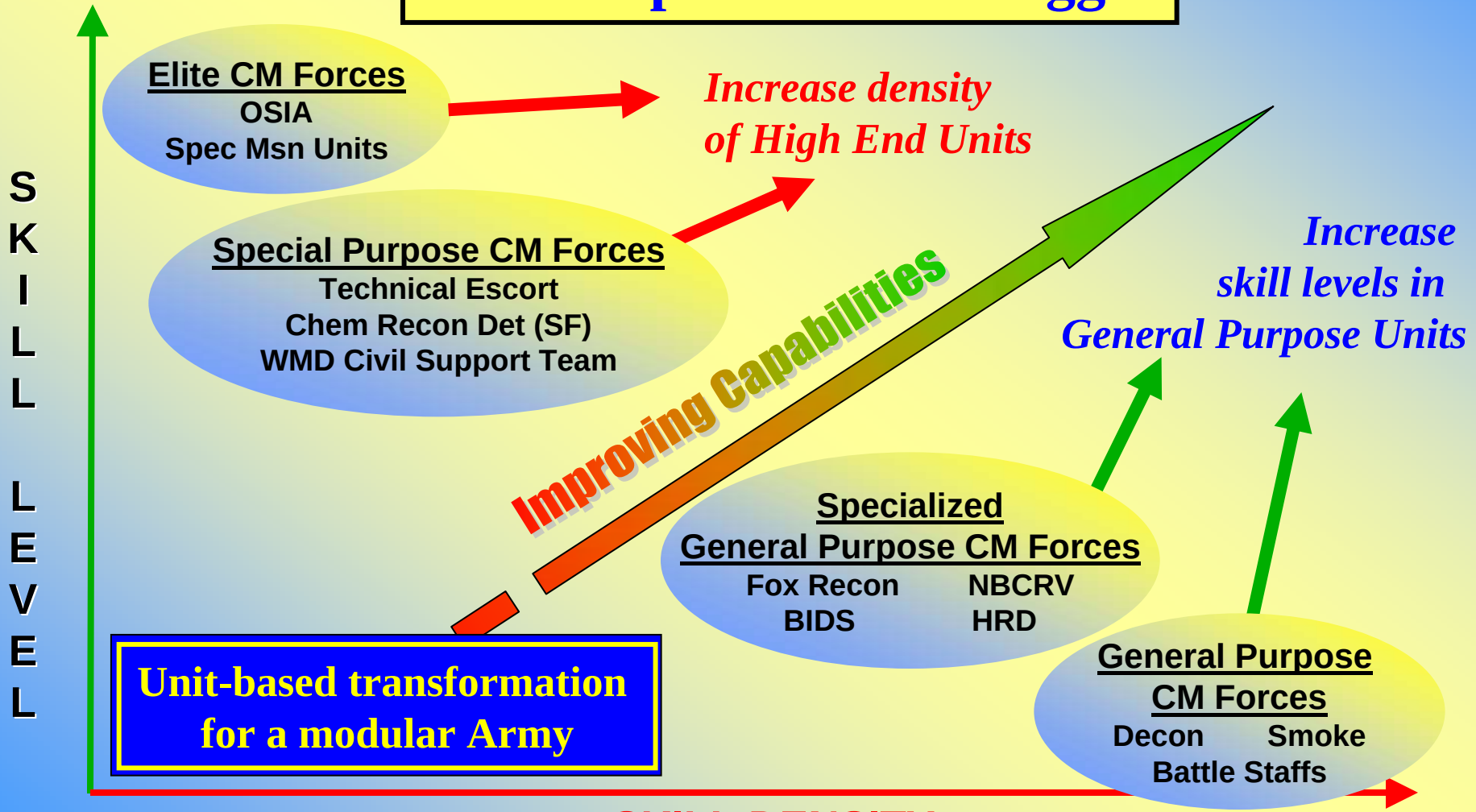
Iraq / Kuwait	Afghanistan
III Corps / 3rd Army 25th ID / 1st CD / 3rd ID	82nd ABN Div

OIF 06-08: HQs, III Corps / 25 ID / 1 CD / 3 ID
OIF 07-09: HQs, XVIII Corps / 3 ID / 4 ID / 1 AD
OEF 07-09: HQs, 101st AA

Transformation

Transformation Strategy

More Capable … Not Bigger



Questions?

Chemical Biological Defense Program Science & Technology

"A Dynamic Balancing Act"

Dr. Darrell Galloway

Chemical Biological Defense Program (CBDP)
Joint Science & Technology Office (JSTO)

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

27 June 2007

Asymmetric Warfare

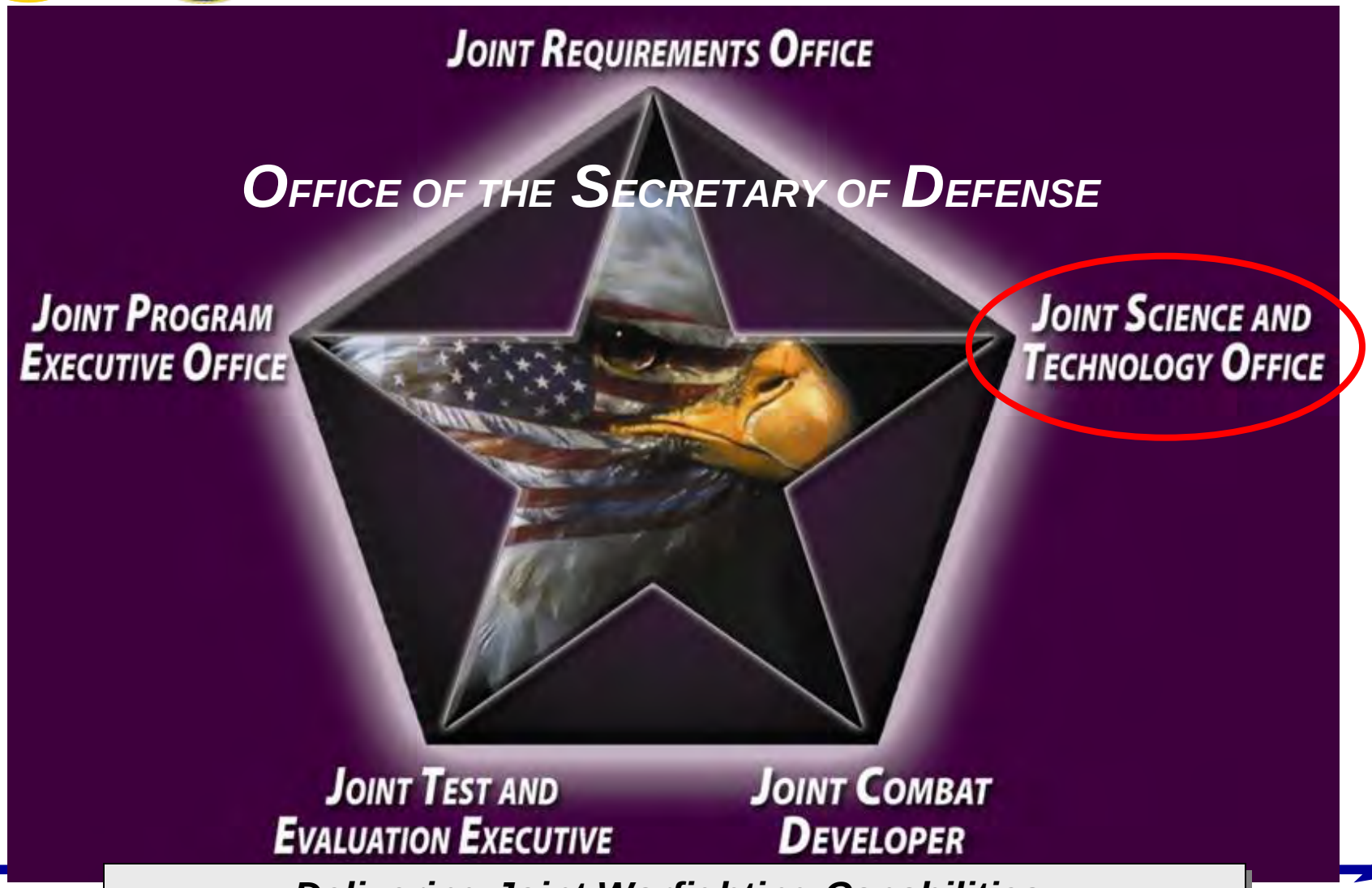
$4.5 Billion

37 cents

The super carrier.
95,000 tons of diplomacy.
4.5 acres of sovereign U.S. territory anywhere, any time.

Consequence of an attack against D.C.
100,000 dead, 125,000 infected
Economic cost = $26 Billion
(Kaufmann *et al.,* 1997)

We are the S&T Arm of the CBDP



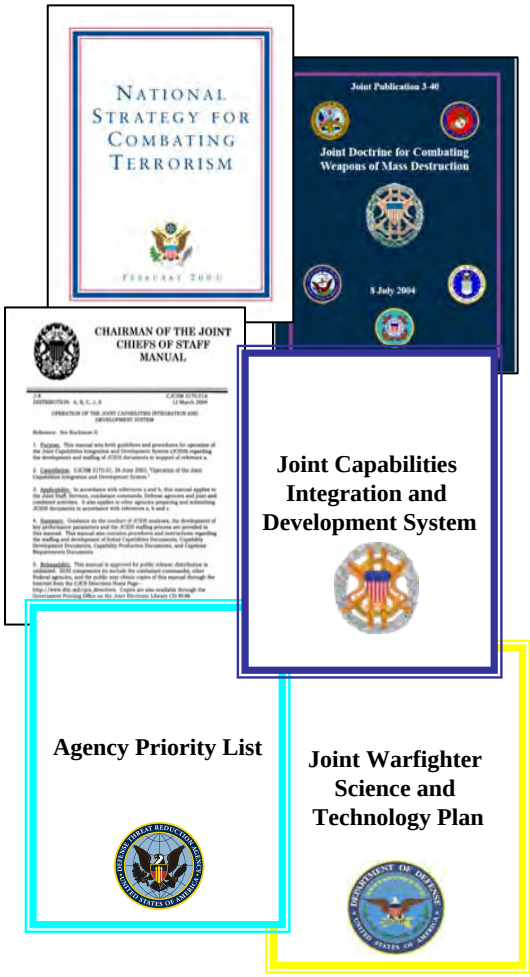
Delivering Joint Warfighting Capabilities

Program Drivers

Warfighter Requirements

Can be in tension with one another

Technology Advances



Policy Goals

Balancing the Warfighter's Needs

Current

Joint

Service Unique

Future

Meeting Deliberate and Urgent Requirements

The way we want to fight

Planned S&T

Future Orientation

Revolutionary

Deliberate

The fight we are in

Time Critical

Urgent Needs

Evolutionary

Want it NOW

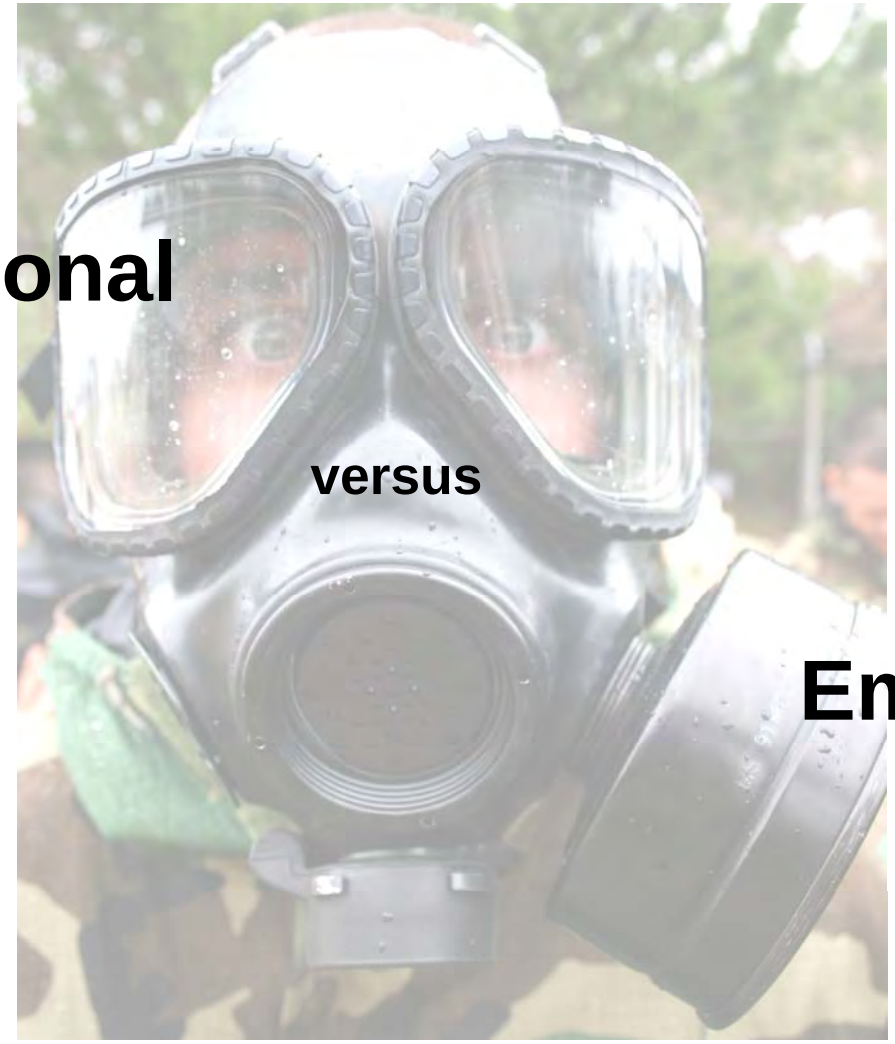
Limited by Current Technology

The Threat

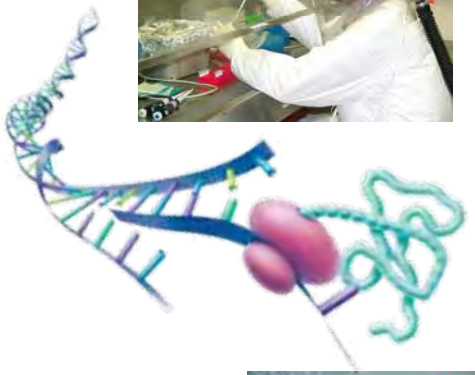
Traditional

Anthrax

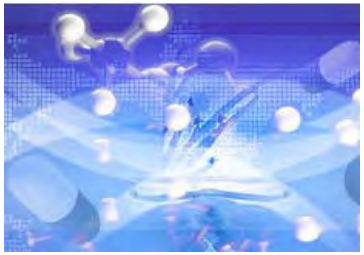
G **V**



versus



Emerging



CBW Agent Spectrum

CLEARLY CHEMICAL — **CLEARLY BIOLOGICAL**

CW

CLASSIC CHEMICAL

- BLOOD
- VESICANT
- NERVE
- PSYCHOLOGICAL INCAPACITANT
- CHOKING

EMERGING CHEMICAL

- PROTECTION DEFEATING
- PHYSICAL INCAPACITANT
- ENHANCERS

BW

BIOREGULATOR

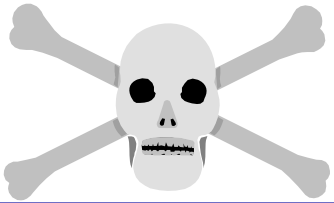
- PAIN
- SLEEP
- BLOOD PRESSURE
- MOOD

TOXIN

- PLANT
- BACTERIAL
- VENOM
- MARINE
- FUNGAL
- ALGAL

PATHOGEN

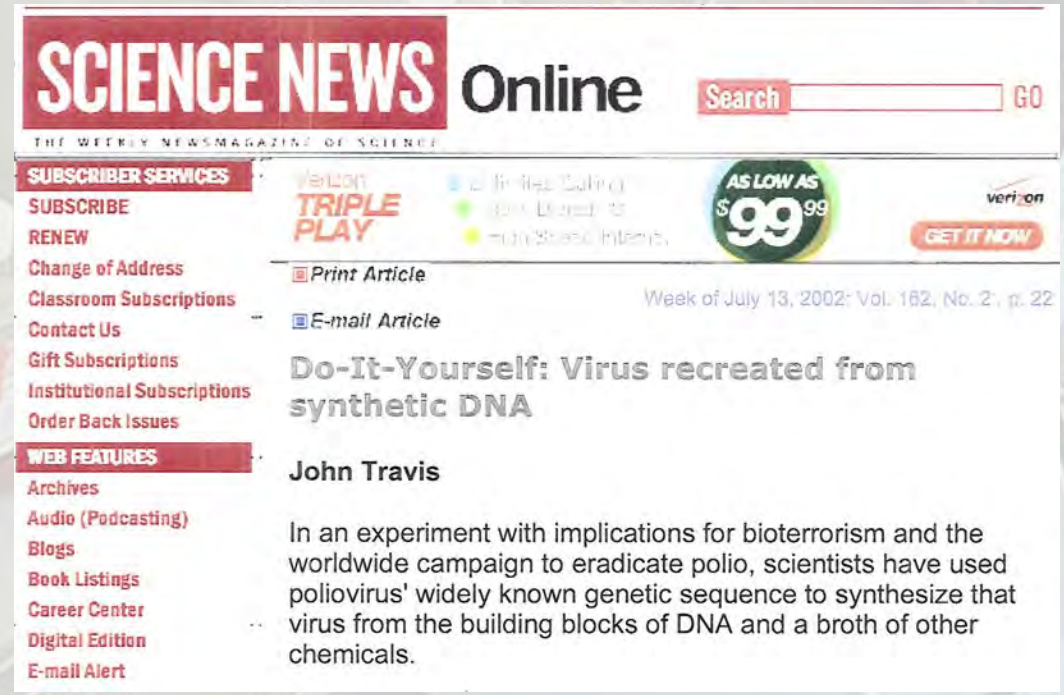
- BACTERIA
- VIRUSES
- RICKETTSIAE
- GENETIC ENGINEERED MICRO-ORGANISMS



MID-SPECTRUM

Emerging Threats

What is the next threat?



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Week of July 13, 2002; Vol. 162, No. 2; p. 22

Do-It-Yourself: Virus recreated from synthetic DNA

John Travis

In an experiment with implications for bioterrorism and the worldwide campaign to eradicate polio, scientists have used poliovirus' widely known genetic sequence to synthesize that virus from the building blocks of DNA and a broth of other chemicals.

How will they do it?

Weighting the Effort

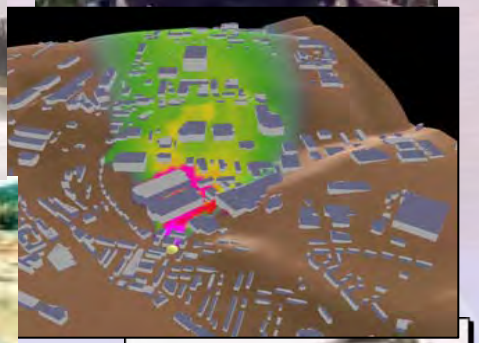
Definite challenges remain for the “old” agents

New challenges with emerging threats

The Solution Realm

Medical

Physical



Hardware and Software

Evolutionary


Impregnated suit and various masks


Placing pigeon in cage at trench entrance


Handheld decon unit & decon tank truck


Trench fan and entrance way


Point & "standoff" detection


Shelters & filters

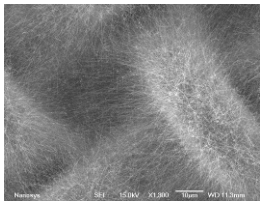

Suit, gloves, boots & various masks


Handhel... various app... including tank...

Transformational Countermeasure Technologies Initiative (TCTI)

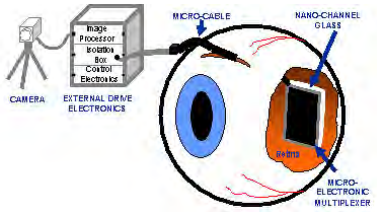
Transformational Countermeasure Technologies Initiative (TCTI)

Basic Science Advances



Nano-catalytic self-decon material

Bio-engineered Countermeasures



Meta-data information interface

Nano-scale protective coatings and fabrics

Integrated Cross-Cutting Technologies

- **Multi-threat defense**
- **Integral design concept**
- **Interactive digital multi-faceted data architecture**

Nanotechnology-Biotechnology-Information Technology-Cognitive Sciences (NBIC)

Broad Spectrum Applications

Future Combat Systems

- **Hierarchial systems of systems**
- **Non-intrusive; minimal logistics**

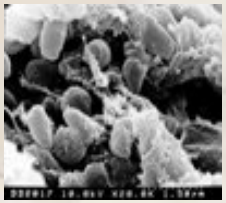
Consequence Management

Achieves An Integrated System Using Revolutionary Technologies While Maintaining the Highest Levels of Performance and Being Invisible to the User

Medical Countermeasures

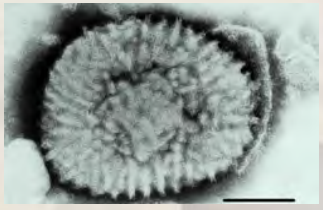
Traditional

Plague



Plague Vaccine

Smallpox



Antiviral for smallpox

Anthrax

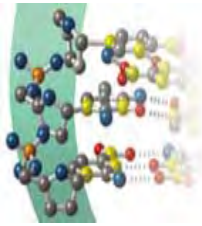
Anthrax Vaccine

Transformational Medical Technologies Initiative (TMTI)

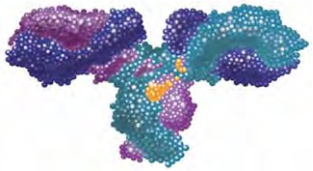
Transformational Medical Technologies Initiative (TMTI)

Scientific Thrust Areas

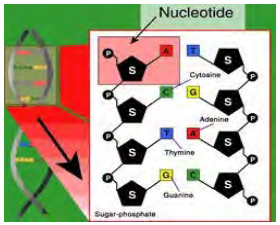
Genomic Identification



Small Molecule Discovery



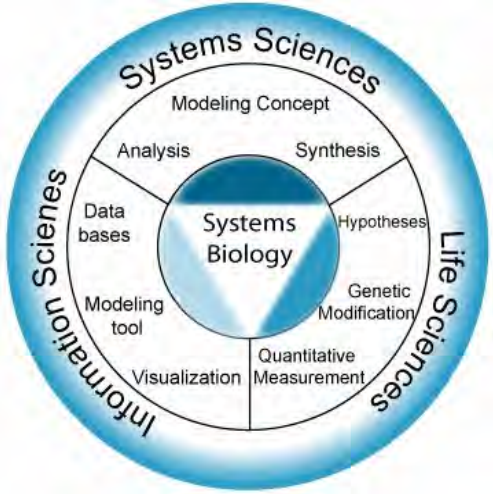
Protein Based Therapeutics



Nucleotide Therapeutics

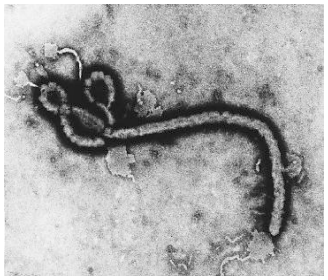
Human Immune Enhancement

Integrated Cross-Cutting Technologies



Microarray Technology
Bioinformatics
Proteomics
Genomics
siRNA

Deliverables



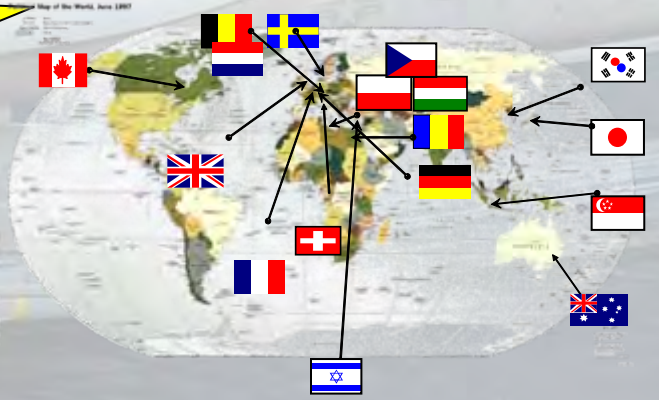
Broad Spectrum Treatments
- ***Hemorrhagic fever viruses***
- ***Intracellular bacterial pathogens***

Genetic ID & Analysis

An Innovative Approach Using Revolutionary Technologies to Expedite the Development of Products to Counter Emerging Biological Threats

Collaboration

International



DoD

Interagency

Around the Globe

Multilateral

Bilateral

We have a diverse performer base

Other Gov't Agencies

Military Service Labs

National Labs

FFRDCs

Industry

International

At the End of the Day

- Combatant Commanders
- Services

ATSD(NCB) provides oversight

Joint Requirements Office (JRO)

Required Capabilities

JFOCS

Prioritized Needs

Test & Evaluation

Joint Science & Technology Office DTRA/CB

S&T Gaps

Mature Technologies

Joint Program Executive Office (JPEO)

Solutions

6.1-6.4

6.4-6.5, Procurement

Conclusions

"New ideas pass through three periods:

- ✓ *It can't be done.*
- ✓ *It probably can be done, but it's not worth doing.*
- ✓ *I knew it was a good idea all along !"*

— Arthur C. Clarke

Questions ?

Joint Staff Combating Weapons of Mass Destruction (CbtWMD) Working Actions

MajGen Larry D. New

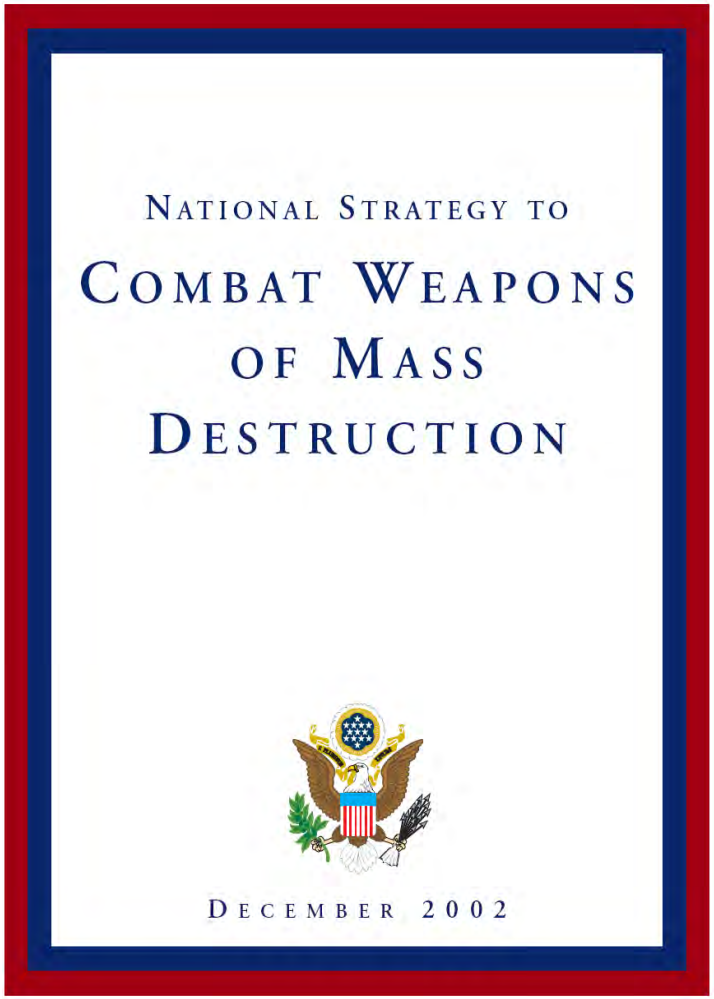
Director, Joint Requirements Office for CBRND/J-8

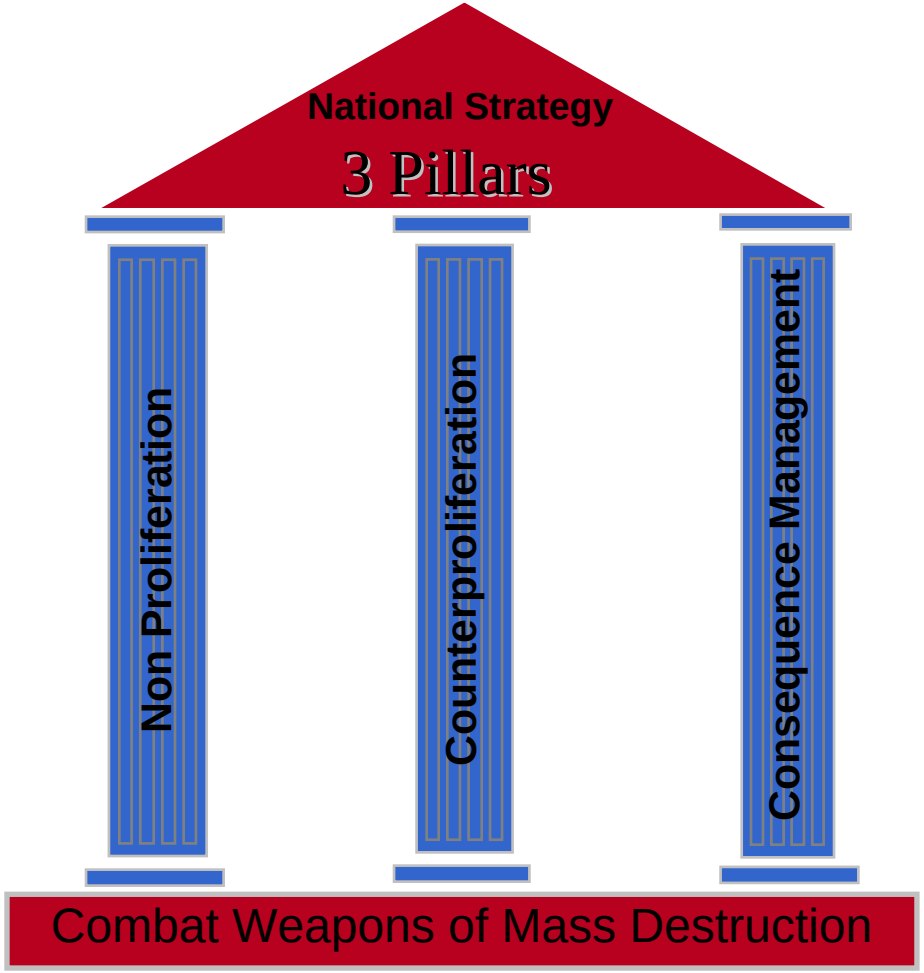
June 2007

Outline

- CbtWMD Strategic Military Framework
- CbtWMD Mission Areas
- DDFP Organization within the Joint Staff
- What we've accomplished
- Questions and Discussion

National Strategy to Combat Weapons of Mass Destruction





National Military Strategy - CWMD Architecture

Joint Staff and J8 DDFP Organization

Chairman of the Joint Chiefs of Staff
General Pace, U.S. Marine Corps

- **J-1**
- **J-2**
- **J-3, Operations**
- **J-4**
- **J-8, Force Structure, Resources, & Assessment Directorate**
  VADM Stanley, U.S. Navy
  - **Deputy Director for Resources Acquisition**
  - **Deputy Director for Force Application**
  - **Deputy Director for Force Protection**
    MajGen New, U.S. Air Force
    - **Joint Theater Air and Missile Defense Organization (JTAMDO)**
      - Homeland Air Security
      - Air and Missile Defense
    - **Joint Requirements Office – Chemical Biological, Radiological, & Nuclear (JRO-CBRN) Defense**
      - CBRN Defense
        - Counter-proliferation
        - Non-proliferation
        - Consequence Management
      - Homeland Defense
    - **Protection Assessment Division**
      - Critical Infrastructure Protection
      - Improvised Explosive Devices
      - Personnel Protection
      - Space Control Protection
      - Insensitive Munitions
      - Electronic Warfare Protection
      - Continuity of Operations
      - Continuity of Government
  - **Deputy Director for Force Management**
- **J-5, Strategic Plans & Policy**
- **J-6**
- **J-7**

Services and COCOMS

What We Accomplished

- Passive Defense
- Consequence Management
- Interdiction
- Elimination

Questions & Discussion

Department of Defense
Chemical Biological Defense Program

Mr. Jean D. Reed

Special Assistant for
Chemical and Biological Defense
and Chemical Demilitarization Programs,
SA(CBD&CDP)

Joint CBRN Conference

June 26, 2007

History of the CB Threat

Evolving Threats

Evolving Response

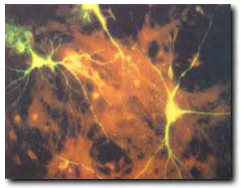
The Changing Nature of the Threat:
Evolution of Chemical and Biological Agents

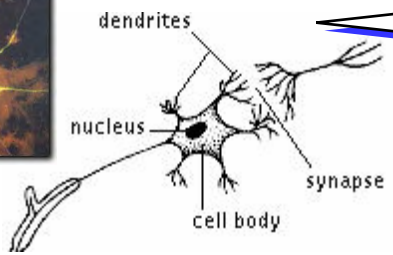
Commercial Chemical Compounds

Phosgene, Chlorine, Chloropicrin

Mustard (H) agents, Lewisite

Cholinesterase Inhibitors





Tabun (GA)

G agents (GB, GD, GF)

V agents (VX)

Novichok agents

"Classical" Biological Agents

Bioregulators

Genetically Modified Agents

Advanced Biological Agents

1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

CBDP Vision and Mission

VISION

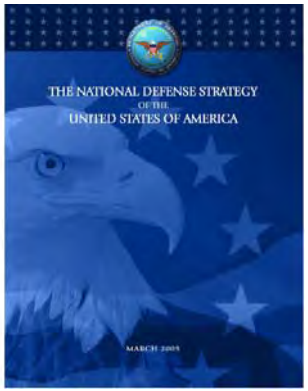
Ensure DOD operations are unconstrained by chemical and biological effects.

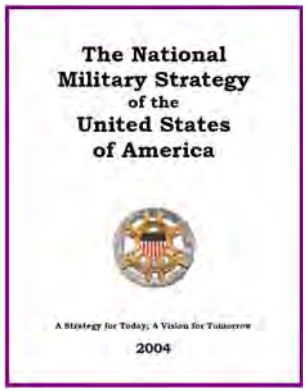
MISSION

Provide chemical and biological defense capabilities in support of the National Military Strategies.

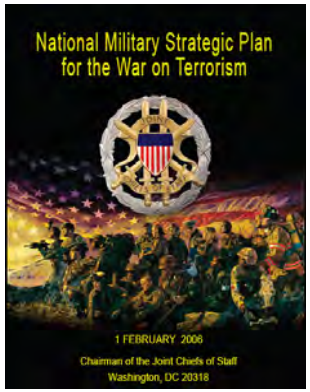
The CBDP Provides Key Capabilities Supporting Multiple National Strategies

National Security

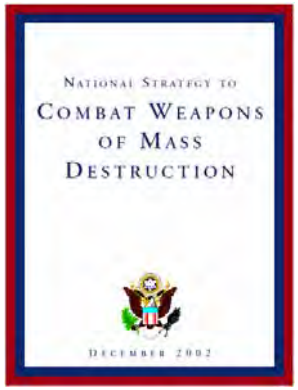


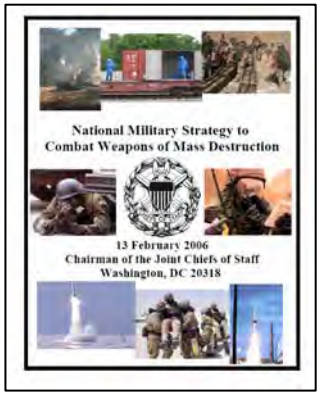


Combating Terrorism

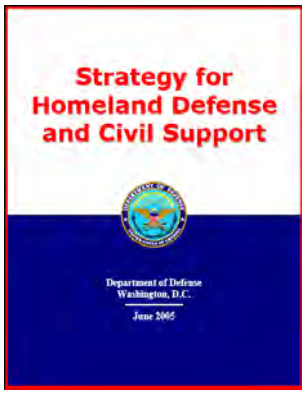


Combating WMD





Homeland Security/Defense



Quadrennial Defense Review (QDR):

Vision for Combating Weapons of Mass Destruction

The future force will be organized, trained, equipped, and resourced to deal with all aspects of the threat posed by weapons of mass destruction. It will have capabilities to:

- ***detect WMD***, including fissile material ***at stand-off*** ranges;
- locate and characterize threats;
- interdict WMD and related shipments whether on land, at sea, or in the air;
- sustain operations under WMD attack; and
- render safe or otherwise eliminate WMD before, during or after a conflict.

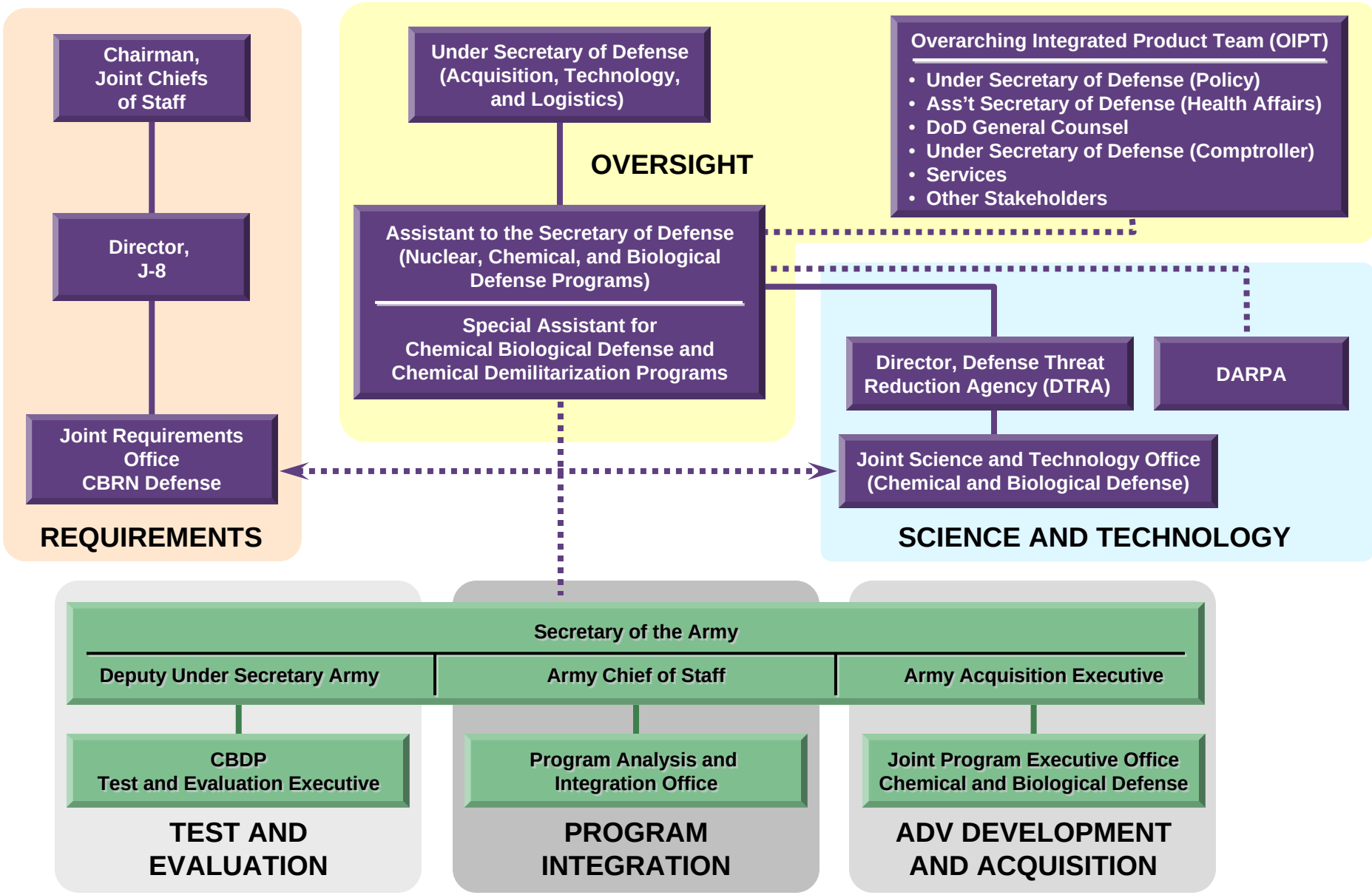
The Department will *develop new defensive capabilities* in anticipation of the continued evolution of WMD threats. Such threats include … *genetically engineered biological pathogens*, and *next generation chemical agents*. The Department will be prepared to respond to and help other agencies to mitigate the consequences of WMD attacks.

ATSD(NCB)'s Program Strategy Guidance for the CBDP

- **Provide a balanced CBDP to support National Military Strategies and Departmental objectives to improve CBRN Defense readiness and reduce operational risk.**
  - Guided by 2006 QDR, SECDEF's FY2008-2013 Planning Guidance.
  - Provides strategic focus for the FY08-13 period.
  - Focuses on capabilities-based approaches.
  - Ensures joint integrated approaches to counter the threat.
  - Addresses lessons learned from Operations Enduring and Iraqi Freedom.
  - Addresses post September 11, 2001 challenges.
  - Supports Transformation, Acquisition Reform and Strengthening Interagency Links.

- **Build a comprehensive fiscal plan wherein *budgets* flow from programs,**
  programs from capability needs,
  capability needs from missions, and
  missions from _national security objectives_.

CBDP Organization



CBDP Process

- Combatant Commanders
- Services

ATSD(NCB) Oversight

Joint Requirements Office (JRO)

Required Capabilities

Capability Needs

Prioritized Needs

Test & Evaluation Executive

Joint Combat Developer

Capabilities to the Warfighter for All Missions

Joint Science & Technology Office for CB Defense

Science &Tech Gaps

Joint Program Executive Office (JPEO)

Mature Technologies

Process based on managing total program risk

Leveraging Interagency Activities are Key to Achieving National Strategies

CBDP Coordinates With:

Counterproliferation Program Review Committee (CPRC)

Technical Support Working Group (TSWG)

U.S. Coast Guard

Centers for Disease Control (CDC)

National Institute of Allergies and Infectious Diseases (NIAID)

Department of Homeland Security (DHS), S&T Directorate

Various Levels of Coordination/Cooperation Exist With:

U.S. Department of Agriculture (USDA)

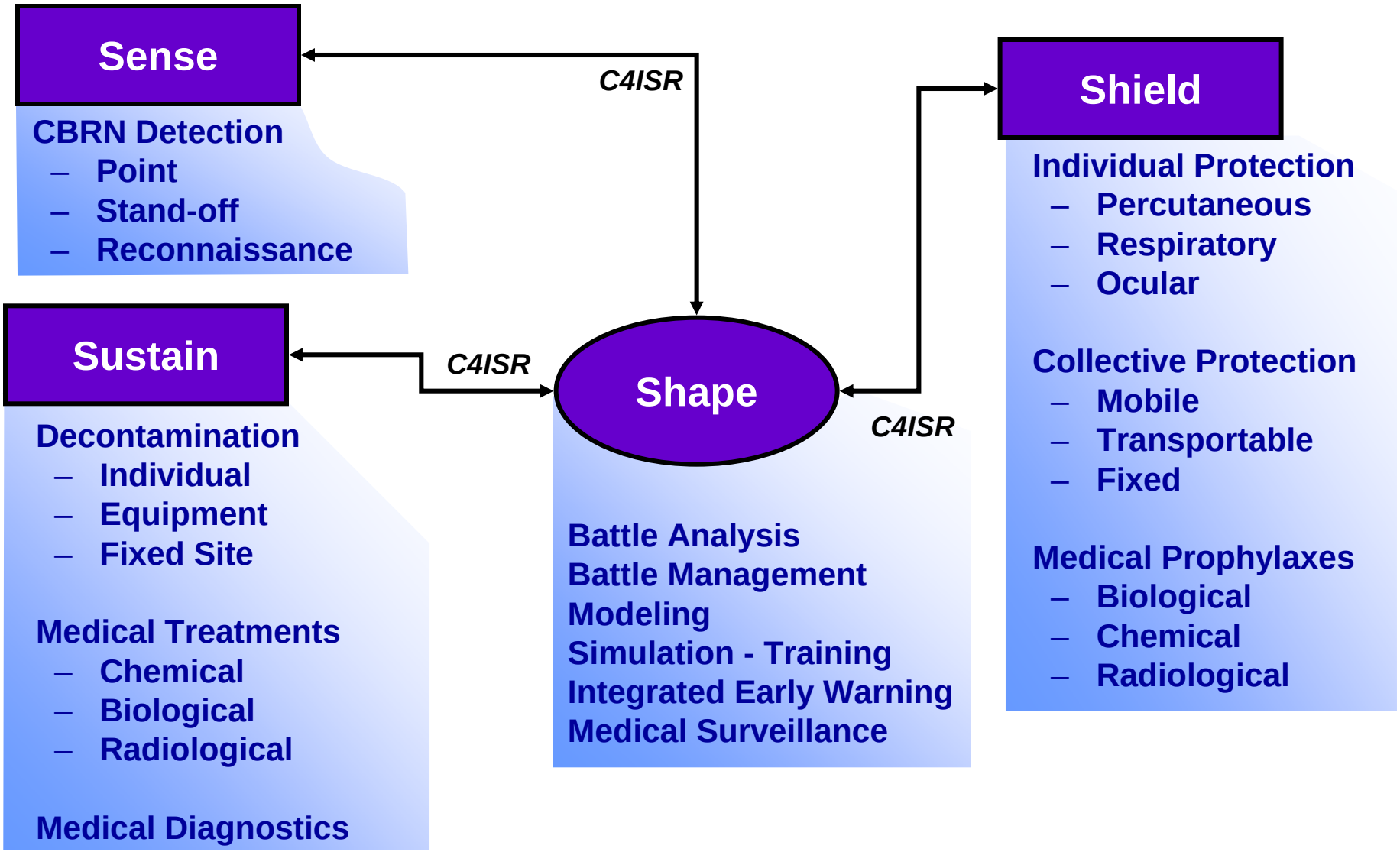
Department of Health and Human Services (DHHS)

Office of Science & Technology Policy

Department of Justice

National Security Council (NSC)

CBRN Defense
Operational Elements and Capabilities



Selected CB Defense Systems

SENSE

Joint Bio Point Detection System (JBPDS)

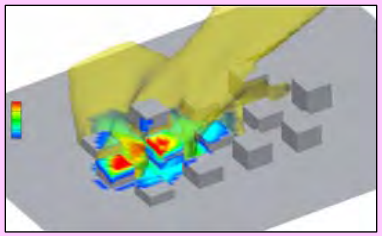
Joint Bio Standoff Detection System (JBSDS)

NBCRV

JCAD

SHAPE

Joint Warning and Reporting Network



Joint Effects Model (JEM)

Joint Operations Effects Federation (JOEF)

SHIELD

Joint Vaccine Acquisition Program

JSLIST

JSGPM

CB Protected Shelter

SUSTAIN

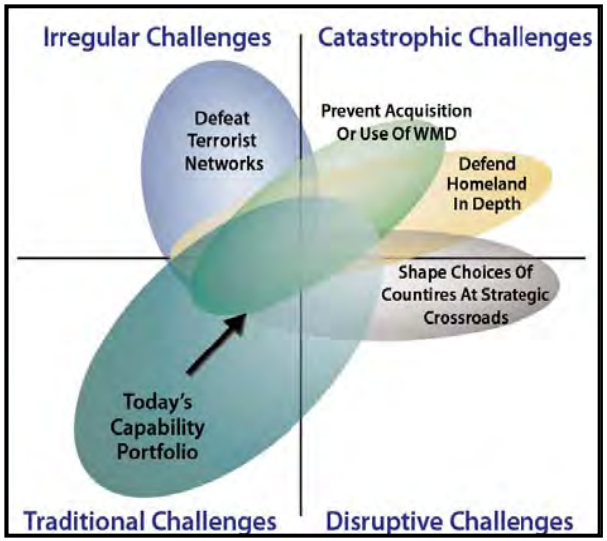
Joint Bio Agent Identification & Diagnostic System (JBAIDS)

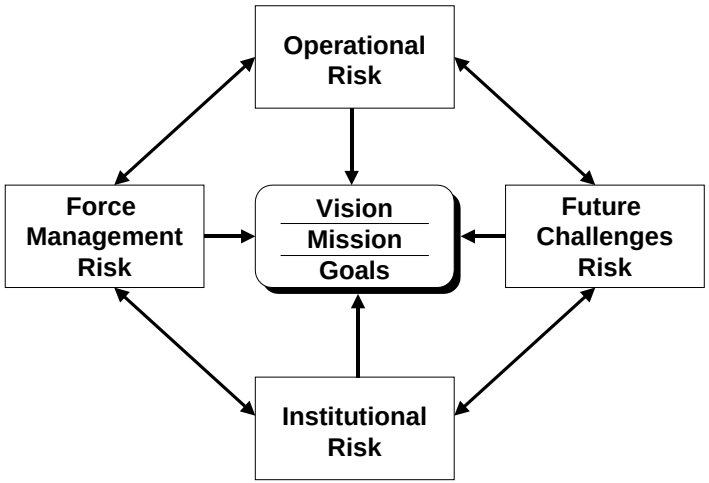
Antidote Treatment, Nerve Agent Autoinjector (ATNAA)

Joint Service Transportable Decon System

Program Alignment with Strategy

- Utilize the Department's **risk management** framework appropriately to reduce near-term risks while developing new capabilities to meet tomorrow's challenges.
- Invest in capability development to address a **wider range of challenges**.
- Provide a risk-informed investment strategy reflecting **joint warfighting priorities**.
- Identify key outputs and appropriate balance among **near, mid, and far-term strategies** for achieving them.
- Ensure strategy-driven, **affordable and achievable** outcomes.
- Support the **transformation** process… one that not only anticipates the future but also seeks to create it.
- Support **transparent, open and agile decision making**.
- Deliver results that **support the Department-wide** strategy.





CBDP Science & Technology (S&T) Initiatives

- **Identify and Exploit Revolutionary Technologies**
  - Transformational Medical Technologies Initiative (TMTI)
  - Transformational Countermeasures Technology Initiative (TCTI)
  - Nanotechnology Initiative
- **Recapitalization of S&T Infrastructure**
  - Test & Evaluation Facilities
  - NTA Test Chamber
  - U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) Recapitalization

Initiatives will enhance CBD S&T capabilities.

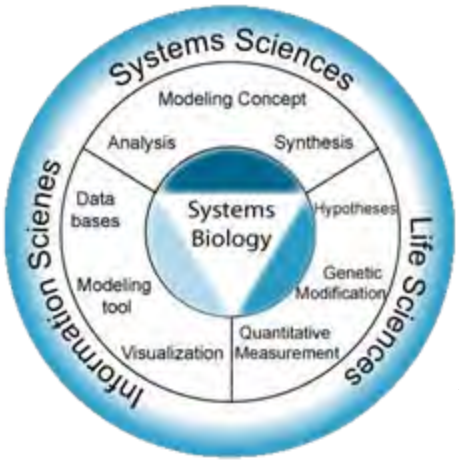
TMTI is a Major Medical Innovation

An innovative approach using revolutionary technologies to expedite the development of products to counter emerging biological threats

Thrust Areas for Research

- *Genomic Identification*
- *Small Molecule Drugs*
- *Protein Based Therapeutics/Biologics*
- *Host Immune Enhancement*
- *Nucleotide Therapeutics*

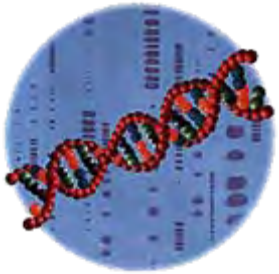
Overarching Research Approach



Microarray Technology
Bioinformatics
Proteomics
Metabolomics
Genomics
siRNA

Product Goals

Platform Technologies



Genetic Sequencing of Pertinent Threat Agents

Broad Spectrum Counter-measures

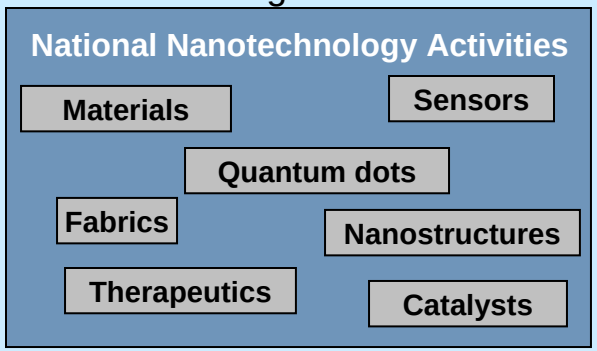
One Drug—Many Bugs

Nanotechnology Initiative

Joint Science & Technology Office (JSTO) nanotechnology initiative is a two-phased effort.

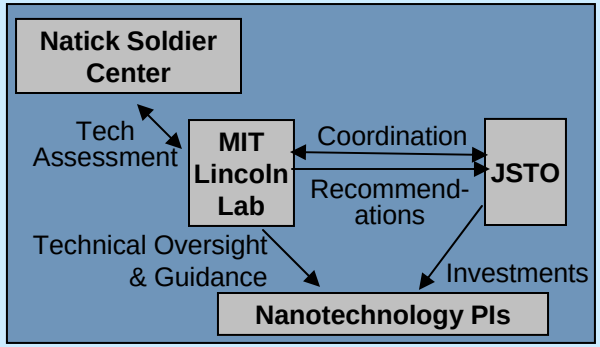
Phase I

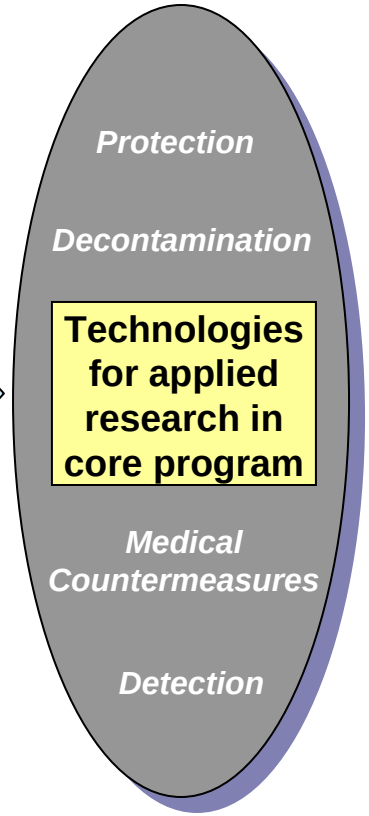
- **Objective:** Conduct a survey of nanotechnologies with application to CBD needs.
- Team from MIT-LL and Natick Soldier Center will conduct the survey.
- Recommendations will be provided to JSTO on applicable nanotechnologies.



Phase II

- **Objective:** Develop a solid S&T base of nanotechnology applied to all aspects of CBD needs.
- Multidisciplinary team will advise nanotechnology program Principal Investigators (PIs).
- Nanotechnology developments will continue to be monitored.

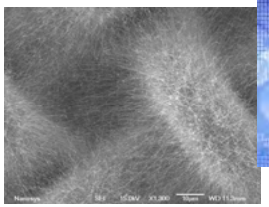




Leverages significant interagency investments for potential CBD applications.

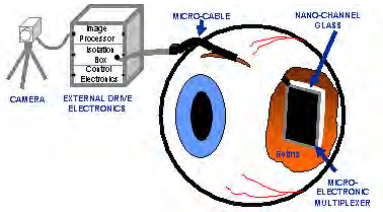
Transformational Countermeasure Technologies Initiative (TCTI)

Basic Science Advances



Nano-catalytic self-decon material

Bio-engineered Countermeasures



Meta-data information interface

Nano-scale protective coatings and fabrics

Integrated Cross-Cutting Technologies

- **Multi-threat defense**
- **Integral design concept**
- **Interactive digital multi-faceted data architecture**

Nanotechnology-Biotechnology-Information Technology-Cognitive Sciences (NBIC)

Broad Spectrum Applications

Future Combat Systems

- **Hierarchical systems of systems**
- **Non-intrusive; minimal logistics**

Achieves An Integrated System Using Revolutionary Technologies While Maintaining the Highest Levels of Performance and Being Invisible to the User

Recapitalization of S&T Infrastructure

- **Initiative underway to recapitalize and revitalize CBD S&T infrastructure, which is required to:**
  - Counter expanding threats from novel and emerging threats.
  - Exploit advances in technology.
  - Speed the technology transition into systems acquisition programs.

U.S. Army Medical Research Institute of Infectious Diseases

Exterior

BL-4 Lab

Edgewood Chemical Biological Center's Advanced Chemistry Lab

Lab Exterior

Filtration System

Lab Interior

CBDP Major Range & Test Facility Base (MRTFB)
Dugway Proving Ground
Key Facilities

Life Sciences Test Facility

Combined Chemical Test Facility

Material Test Facility

Test Grids (Simulant)

Defensive Test Chamber

CBDP Funds only MRTFB facilities

CBDP Priorities for FY08

- Stable funding for the **Transformational Medical Technologies Initiative (TMTI)** to fully exploit the advanced science and technology innovation necessary to successfully counter future genetically engineered biological weapons.
- Adequate long-term investment in the **Research, Development, Test, and Evaluation (RDT&E) infrastructure** to enhance our RDT&E capabilities, including the modernization and construction of laboratories and test facilities to ensure we develop advanced countermeasures against current and emerging chemical and biological threats.
- **Consistent resources for the overall program** itself to ensure that, year after year, we are able to field the improved defensive capabilities essential to ensure our military can operate in any environment, unconstrained by chemical or biological weapons.

Selected CB Defense Systems

SENSE

Joint Bio Point Detection System (JBPDS)

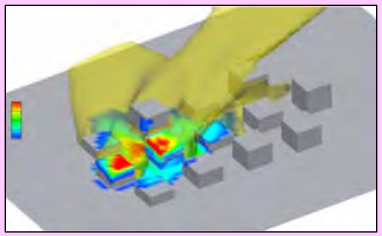
Joint Bio Standoff Detection System (JBSDS)

NBCRV

JCAD

SHAPE

Joint Warning and Reporting Network



Joint Effects Model (JEM)

Joint Operations Effects Federation (JOEF)

SHIELD

Joint Vaccine Acquisition Program

JSLIST

JSGPM

CB Protected Shelter

SUSTAIN

Joint Bio Agent Identification & Diagnostic System (JBAIDS)

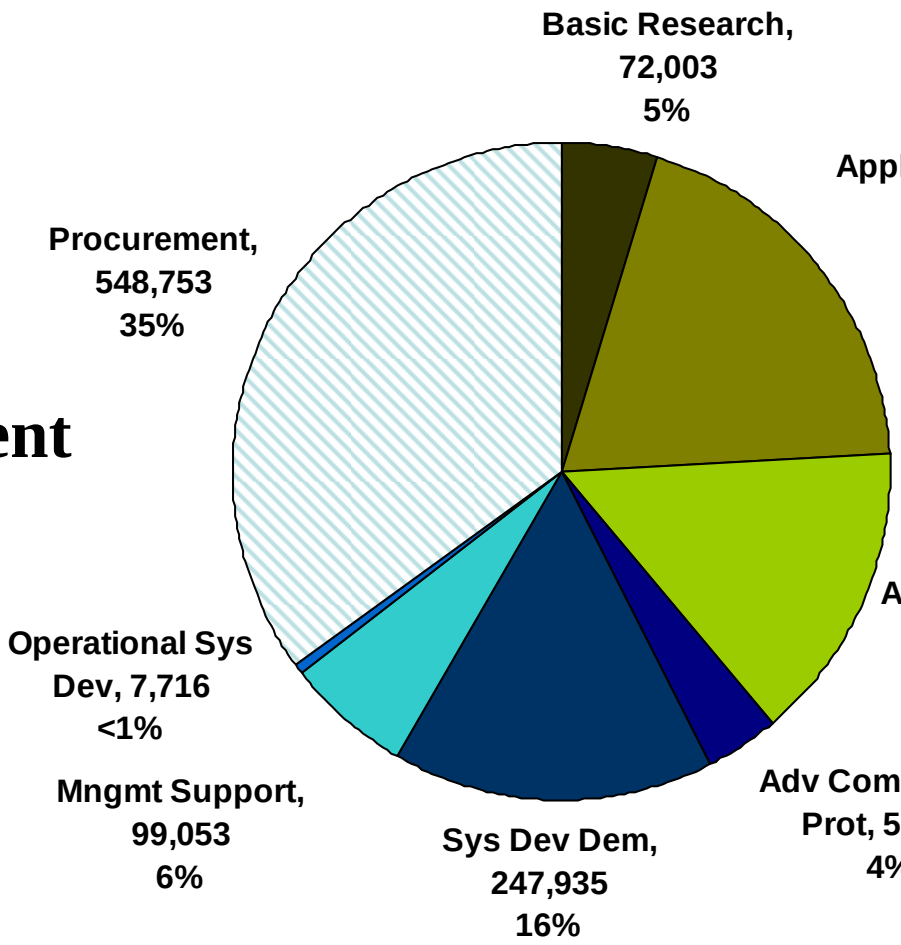
Antidote Treatment, Nerve Agent Autoinjector (ATNAA)

Joint Service Transportable Decon System

Chemical Biological Defense Program

Based on FY08 President's Budget Request (February 2007)

$1.570 Billion



Procurement

Science & Technology Base

Advanced Development

Readiness and Overall Unit Preparedness

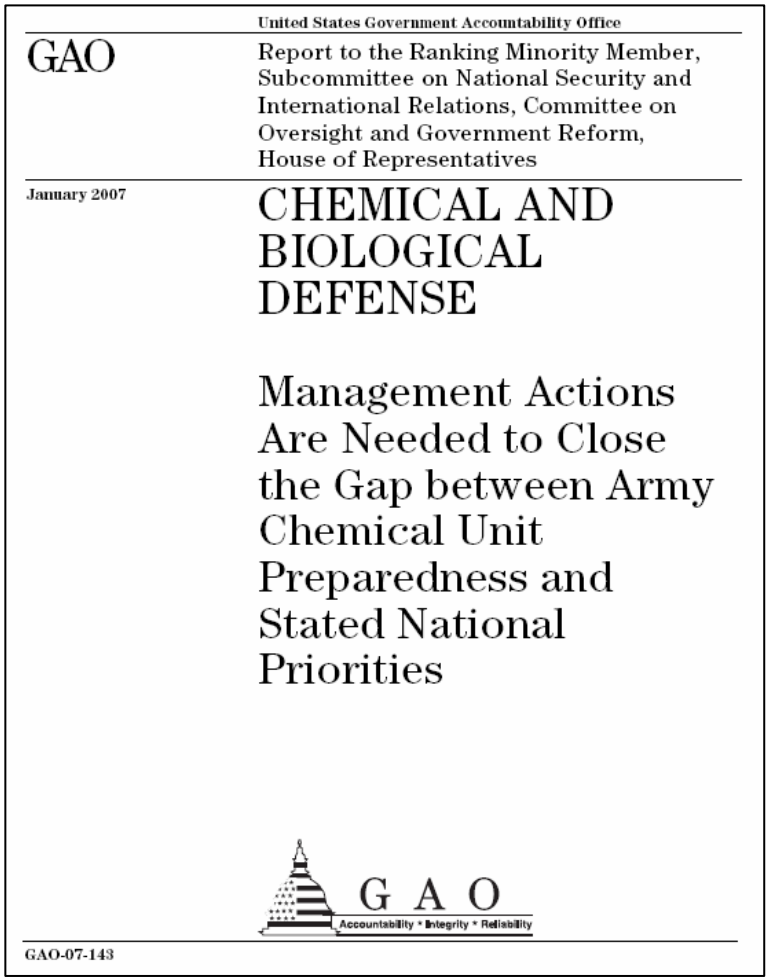
Readiness and Overall Unit Preparedness

Army Chemical Unit Preparedness

- **GAO Report, "Management Actions Are Needed to Close the Gap between Army Chemical Unit Preparedness and Stated National Priorities," January 2007**
  - **GAO evaluated the Army's chemical and biological units, including the extent to which (1) units tasked with providing chemical and biological defense support to combat units and commands are adequately staffed, equipped, and trained and (2) units also tasked with a homeland defense mission—especially National Guard and Reserve units—are adequately prepared for this mission.**

WMD-Civil Support Team (CST)

- **WMD-CST unfunded requirements identified during FY08-13 POM build. Requirement to be addressed during the FY10-15 POM build**


United States Government Accountability Office

GAO

Report to the Ranking Minority Member, Subcommittee on National Security and International Relations, Committee on Oversight and Government Reform, House of Representatives

January 2007

CHEMICAL AND BIOLOGICAL DEFENSE

Management Actions Are Needed to Close the Gap between Army Chemical Unit Preparedness and Stated National Priorities

GAO

Accountability * Integrity * Reliability

GAO-07-143

CBDP: The Way Ahead

- **Need to build on current strengths…**
  - Integrated collection of systems
  - Multi-disciplinary approaches
  - Well developed doctrine and concepts for the military in operational environments
- **…while recognizing a changing environment**
  - Laboratory and other infrastructure may need overhaul
  - Operational environment must consider homeland security
  - Emerging and non-traditional threats may be critical
  - Congress will continue to play an active role
  - Industry may be increasingly important, though DoD-unique assets need to be identified and maintained

CBDP: The Way Ahead

- **…and Planning for the Future**
  - Need to balance investment between current risks (operational and procurement needs) and future risks (S&T and infrastructure)
  - Coordination with other agencies (DHHS, DHS, and others) for an effective national effort
    - DoD may play key role in transitioning technologies from laboratory concepts to field-ready systems, especially medical systems
  - Broad-spectrum, dual-benefit approaches will need to be evaluated in all areas

Back-up Slides

Issues

Military Construction (MILCON)

- **The Army, as Executive Agent for the CBDP, no longer plans, programs, or budgets for CBDP-related infrastructure**
  - **The Army owns a vast majority of the infrastructure that directly supports the CBDP**
  - **Army Regulation 415-15* revision prohibits the programming of MILCON, Army, for CBDP-related efforts based on Army General Counsel review of 50 USC 1522**

* AR 415-15, Army Military Construction and Non-appropriated-Funded Construction Program Development and Execution, 12 June 2006

Army Chemical Unit Preparedness

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WMD-Civil Support Team (CST)

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Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD)

- **JPEO providing recommendation through Army Acquisition Executive on military utility of the JSLSCAD program**

Integrated Consortium of Laboratory Networks

- **Homeland Security Presidential Directive 9 gave impetus to develop networks to coordinate the specific skills and resources of laboratories nationwide for the complete, rapid, and effective facilitation of disease surveillance and response to bioterrorism-related health emergencies**
  - **Recommend continued DoD participation in the ICLN to ensure effective response to CBRN events**

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Support the Force

Improve Fielded Capabilities

Build the Future

PRESENTED TO:

Joint CBRN Conference
Fort Leonard Wood, MO

STEPHEN V. REEVES
Major General, USA
Joint Program Executive Officer
for Chemical and Biological Defense
(703) 681-9600

Supporting the Force

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THE THREAT IS REAL

Toxic Industrial Chemical Detection and Protection Equipment Set (TIC PDE)

Commercial-Off-The-Shelf (COTS)

Sensitive Site Exploration (SSE)

Additional Training Sets Approved Under NSERP to Address User Needs

Sets include: HAZMAT ID, MultiRAE Plus

Meets CENTCOM Operational Needs Statement (ONS)

Joint Acquisition CBRN Knowledge System (JACKS) Information Response Center (IRC)

- Consolidates all CB Hotlines
- Operates on a 24/7/365 Basis
- Provides Single Entry Point for all CB Defense Equipment Information

"One-Stop-Shop" for CBRN Equipment Information

- Total Asset Visibility
- Specifications and Standards
- Fact Sheets
- Advisory Messages
- Shelf-Life Information
- New Equipment Training

HOTLINE SUPPORT
1-800-831-4408
https://jacks.jpeocbd.osd.mil

Fully-Integrated CBDP Information Center

Improving Fielded Capability

15 New Capabilities

34 Capabilities Currently Fielding

PROTECTION



INFORMATION/ ANALYTICAL SYSTEM



MEDICAL

SURVIVABILITY



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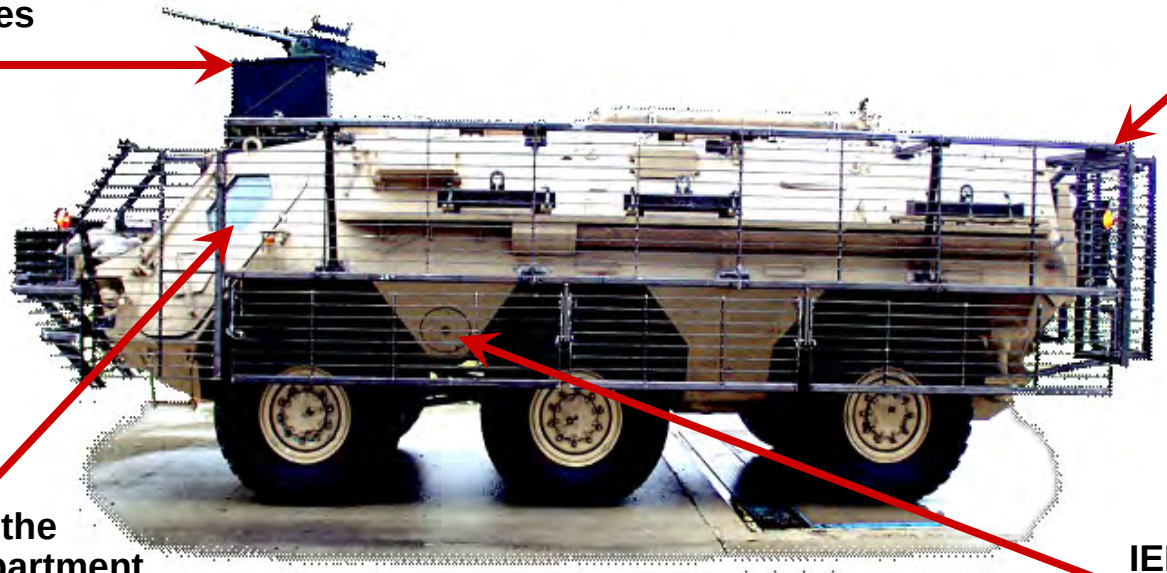
M93A1P1 FOX NBCRS Upgrade

- Improved RPG Protection: Slat Armor
- Improved IED Fragmentation Protection
- Up-Gun to M2 Machine Gun
- Common Remotely Operated Weapon System (CROWS)
- Enhanced Communications (VIC III)



Enhanced Survivability and Lethality

Individual Protection

Joint Service Lightweight Integrated Suit Technology (JSLIST)

- *Universal Camouflage Pattern*
- *Type II: Most Application*
- *Type VII: Special Ops*

Joint Service Mask Leakage Tester (JSMLT)

JSLIST Block 2 Glove Upgrade (JB2GU)
(24 hours of protection / up to 30 days of wear)

Alternative Footwear System (AFS)

Integrated Footwear System (IFS)

- **Increased Durability**
- **Reduced Weight and Improved Fit**
- **Enhanced Suit Closures and Higher Confidence**
- **Reduced Heat Stress by 15%**

Individual Protection Fieldings

Joint Service Chemical Environment Survivability Mask (JSCESM)

Joint Service General Purpose Mask (JSGPM)

Improved Fit, Increased TIC Capability, Reduced Burden

Medical Treatments – Improved Nerve Agent Treatment System (INATS) / Advanced Anti-Convulsant System (AAS)

AAS: Replaces Currently Fielded Convulsant Antidote for Nerve Agents

Faster Acting and Increased Efficacy Protects Nerve Agent-Induced Seizures, Reduces Neurological Damage and Prevent Seizure Reoccurrence

Enhanced Treatment Regimen Broad Spectrum of Nerve Agents

INATS: Replaces Currently Fielded Oxime

Collective Protection Fieldings (Ongoing and Upgrades)

Collectively Protected Expeditionary Medical Support System (CP EMEDS)

Collectively Protected Deployable Medical System (CP DEPMEDS)

Collectively Protected Small Shelter System (CP-SSS)

Chemical Biological Protective Shelter (CBPS)

Shipboard Collective Protected System (CPS)

Chemical Biological Medical System Fielding

Joint Biological Agent Identification and Diagnostics System (JBAIDS)

Rapid Identification and Diagnostic Confirmation for BWA and Other Pathogens

Decontamination Fieldings

Lightweight Multipurpose Decontamination System (LMDS)

Replaces M17

Army ONS – Modified COTS Interim Capability Prior to Joint Service Transportable Decontamination – Small Scale

Joint Service Personnel Decontamination System (JSPDS)

Reactive Skin Decontamination Solution (RSDL)

Improved Performance - Increased Capability for Current and Emerging Threats

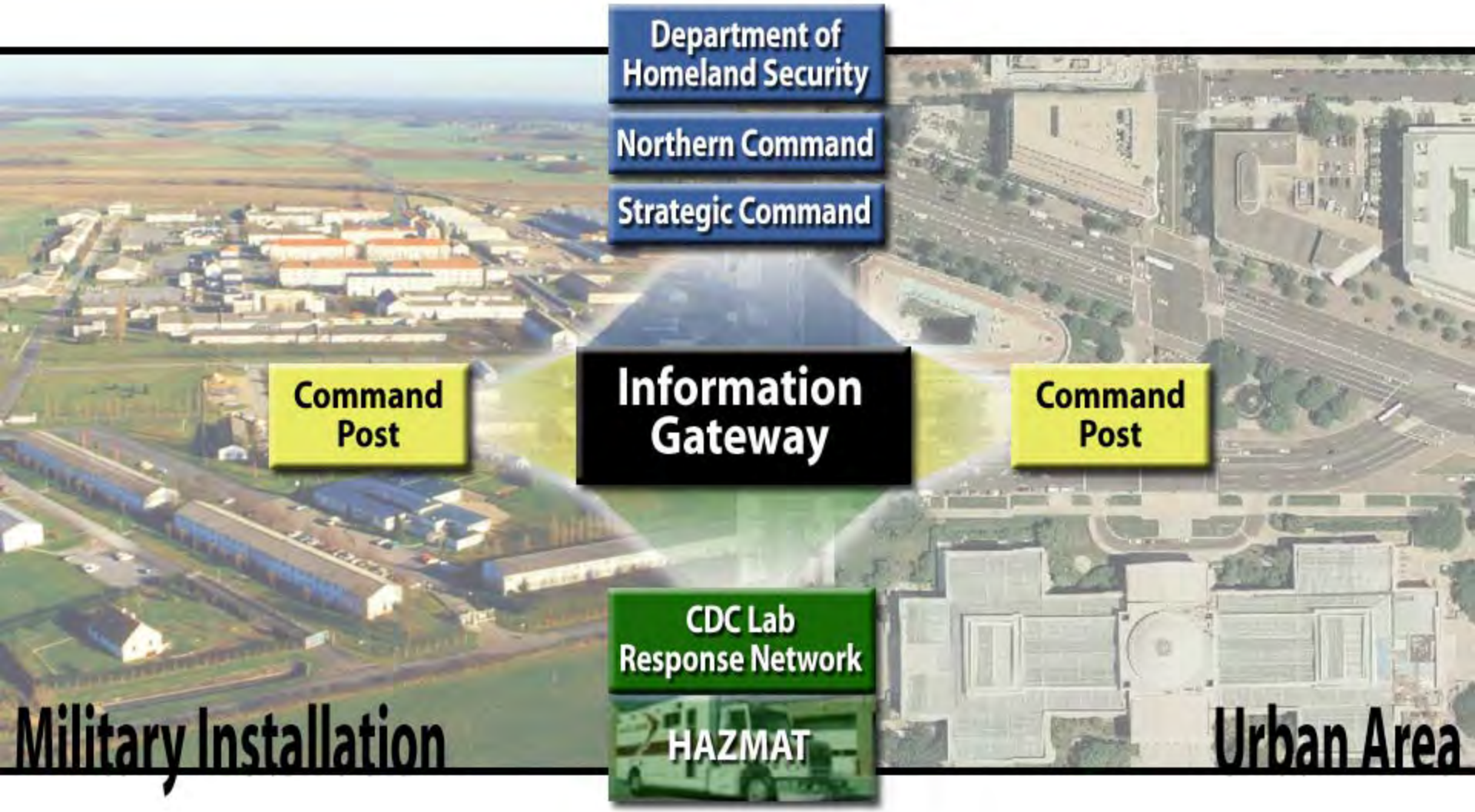
Installation Protection Program (IPP)

Capabilities:

- Integrated and Effective Protection
  - Respond and Recover
  - Effective and Affordable
    - Detection
    - Warning
    - Decontamination
    - Information Management
    - Medical Protection, Surveillance, and Response

IPP Fielding: 44 Locations
First Responder Program: 32 Locations

Civil-Military Network Integration



Supporting the National Guard: JPM Guardian Fieldings

CST Unified Command Suite (UCS)

Increment 1

Increment 1 Components

KU Band System

Wireless Camera/ Transceiver

Increment 0

Transportable Communication Package (ADVON)

Commanders Vehicle

CST Analytical Laboratory System (ALS)

Increment 1 Analytical Upgrade

Chemical / Biological Agent Detection & Analysis

JBAIDS - PCR

IMS

FT/IR

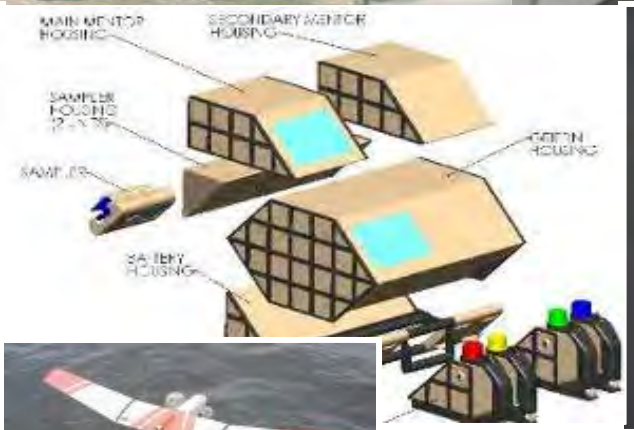
M1M

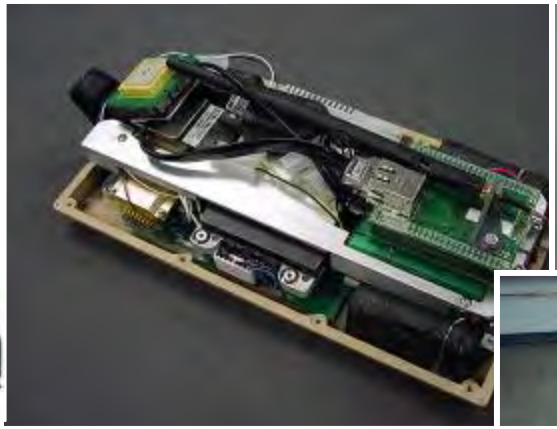
New JPM: Consequence Management
Enhanced BW / CW and TIC Capability
Increased Interoperability

Building the Future

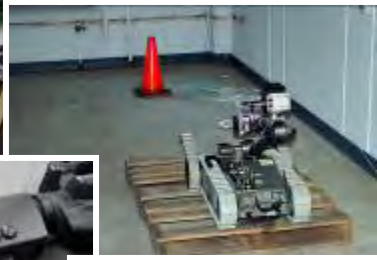
















Joint Warfighter Experimentation

Building the Future - NOW

THE HOLSTER CONCEPT

WARFIGHTER EFFECTIVENESS AND SUITABILITY

Today
- ACADA
- ICAM
- DFU
- JBPDS
- BIDS
- JPS
- RADIACs

< 2 Years
- GOTS/COTS equipment
- Expanded warfighter capability

Field to BCT – FY08

2-5 Years

* Notional concept for limited objective experiment / demonstration

- Repackaged sensors
- Modular, tailorable, plug-n-play
- Net-Centric with GPS and wireless capability
- Supports development of interface control documents and equipment specification
- Common CBRN Sensor Interface (CCSI) the "Holster"

5-10 Years

- Miniaturization
- Auxiliary/complimentary functionality

> 10 Years

- Sensor capability integrated into warfighter ensemble

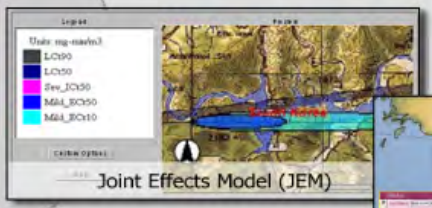
Network-Centric Capability – NOW
Foundation for the Future

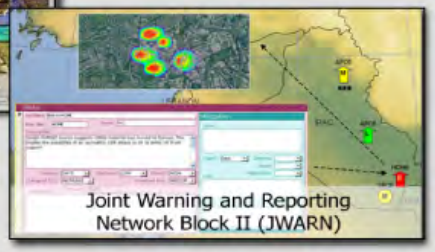
Major Future Fieldings

Eighteen Planned New Capabilities

DETECTION

INFORMATION SYSTEM





CUGR ACTD

PROTECTION

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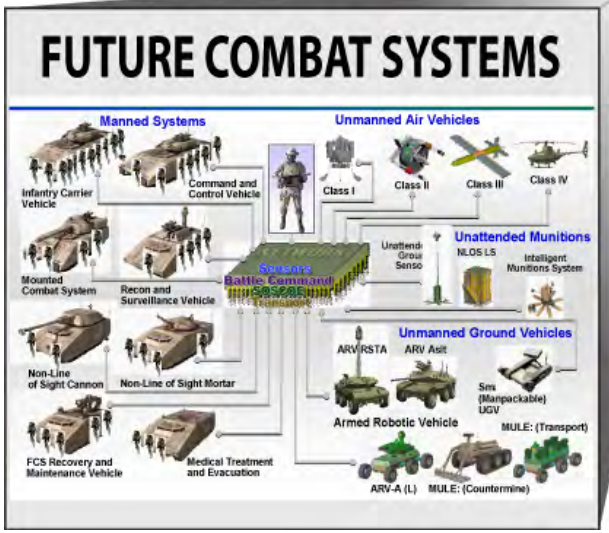
Major Defense Acquisition Program (MDAP)
Chemical/Biological Defense Program Support



CBRN REQUIREMENTS

CBR Detection
Battle Management
Integrated Early Warning
Collective Protection

Decontamination
Individual Protection

OTHERS
Bradley, THAAD,
CFPI, UAV...

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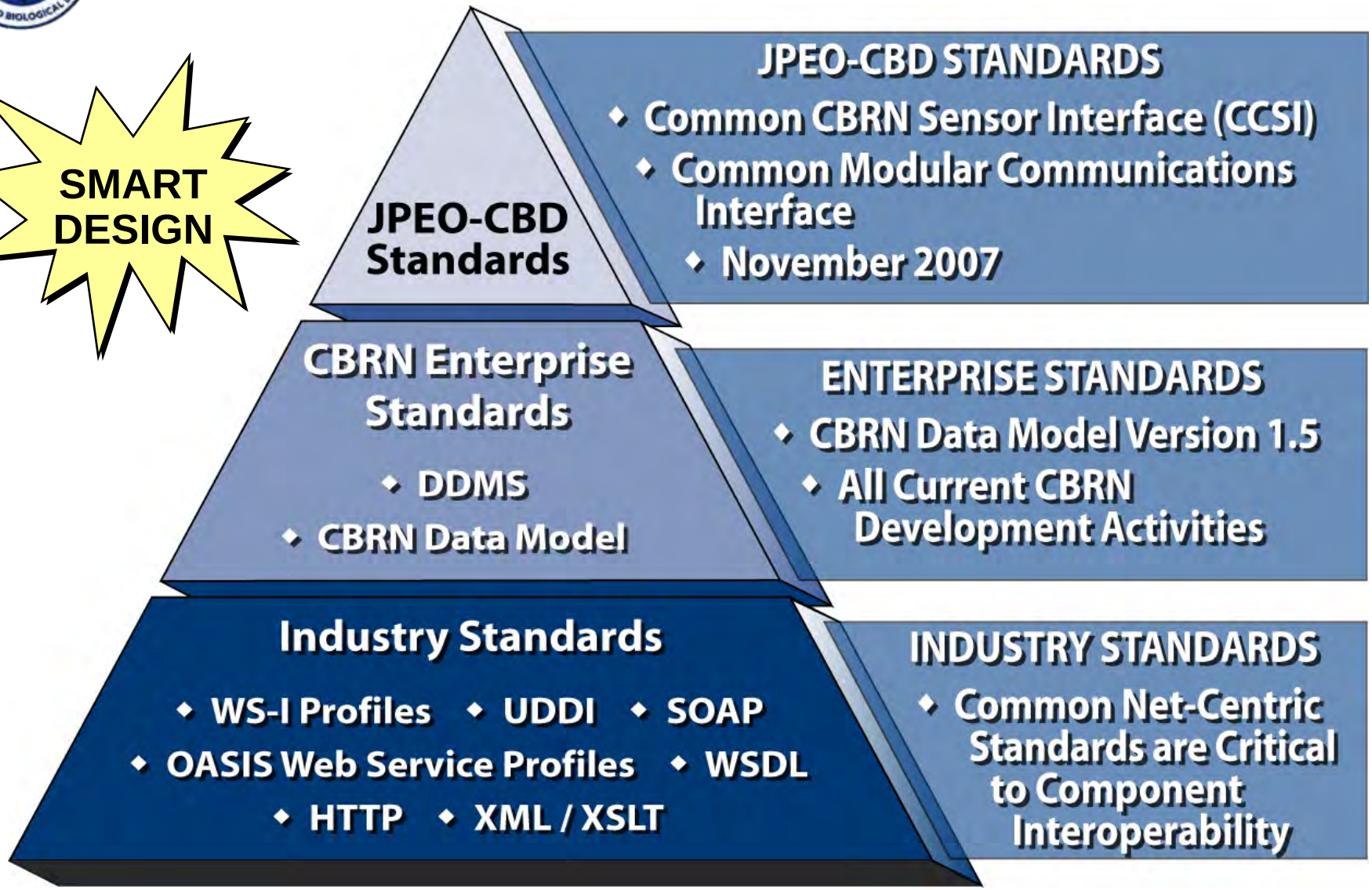
Software Standardization

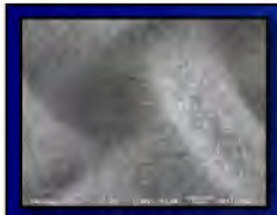
SMART DESIGN



Interoperability Built From The Bottom Up – Common Standards!

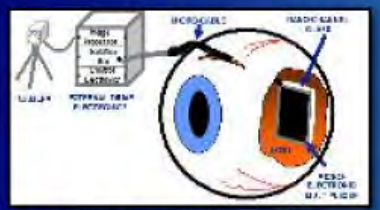
Integration of Advanced Materials and Concepts

Basic Science Advances → **Integrated Cross-Cutting Technologies** → **Broad Spectrum Applications**



Nano-Catalytic Self-Decon Material

Bio-Engineered Coutnermeasures

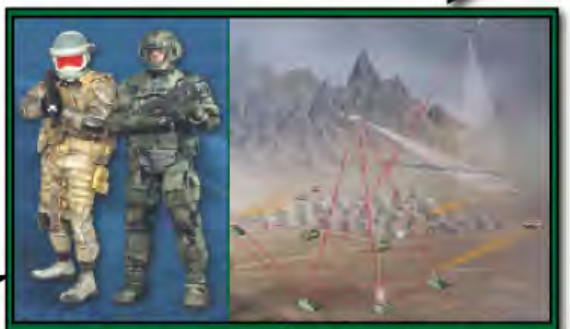


Meta-Data Information Interface

Nano-Scale Protective Coatings and Fabrics

- Broad Spectrum Defense for Hazardous Matierals
- Modular Design Concepts
- Interactive Digital Architecture

- Nanotechnology
- Biotechnology
- Information Technology
- Cognitive Sciences
- Materials Science



Future Combat Systems

- Hierarchical System of Systems
- Non-Intrusive; Minimal Logistics

Consequence Management

An Integrated System Using Revolutionary Technologies Transparent to the User

Medical System Integration

CB Event - Current Approach

Agent Delivery → Doses on Target → Downwind Dispersal → Doses Absorbed → Symptoms → ***Sustained Combat Power***

Medical Pretreatment

Medical Diagnostics

Medical Therapeutics

Integrated Medical Capability

Transformational Medical Technology Initiative

Multi-agent Vaccines

Bioinformatics

Medical Surveillance

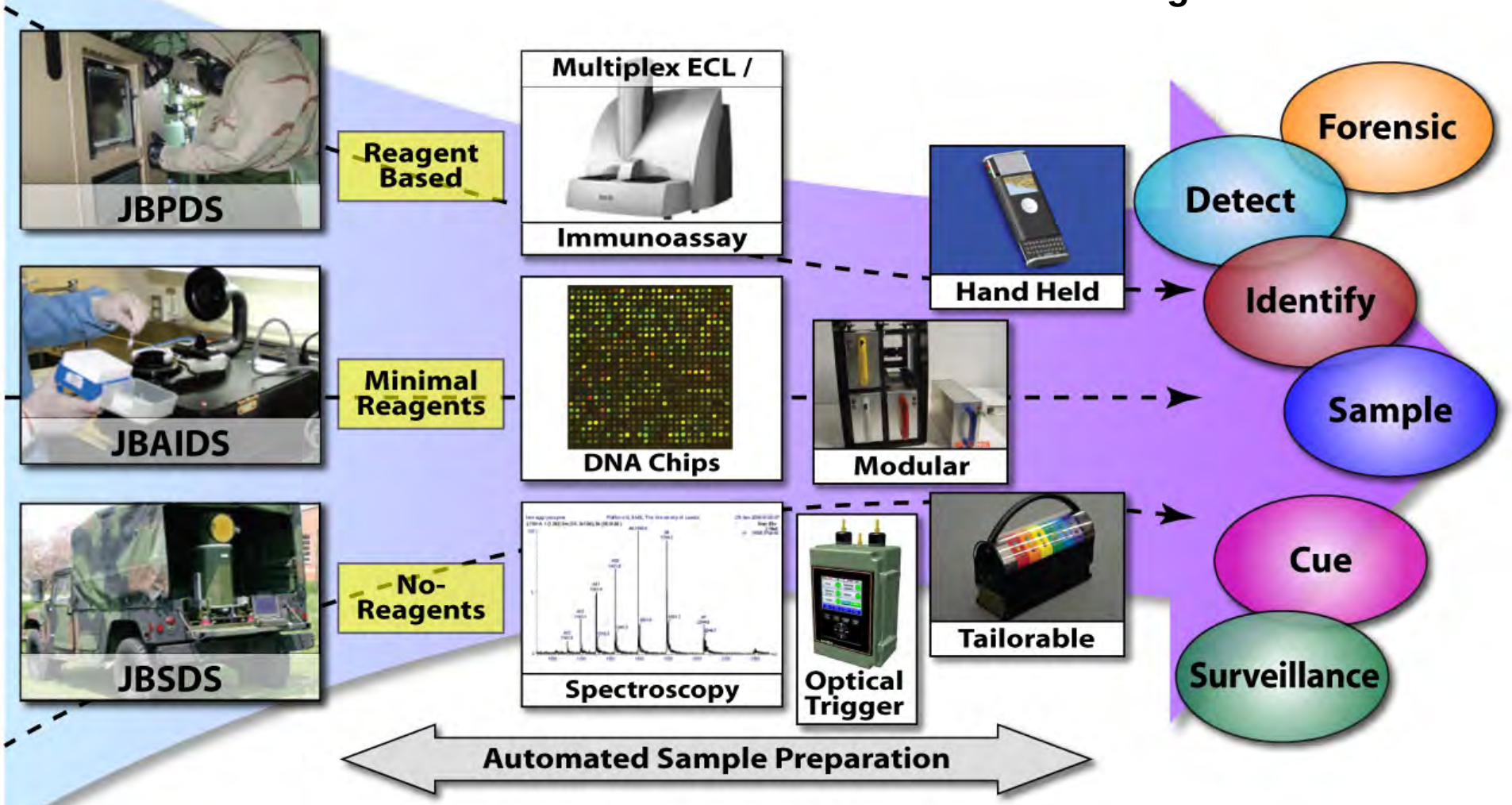
Broad Spectrum Therapeutics

Integrated System Using Revolutionary Technologies Transparent to the User

Bio-Sensing Vision

Develop and Field Advanced Bio Sensing Technologies

- Multi-Plex for Broad Range of Threats
- Tailorable for Threat/Mission
- Modular Across Sensing Modality
- No/Minimal Reagents



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Chemical Detection Vision

Develop and Field Integrated Systems

- Broad Spectrum Capable (TIC, Advanced Threat)
- Tailorable for Threat/Mission
- Modular Across Operational Needs

Forensic

Detect

Identify

Sample

Cue

Surveillance

Automated Sample Preparation

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Decontamination Vision

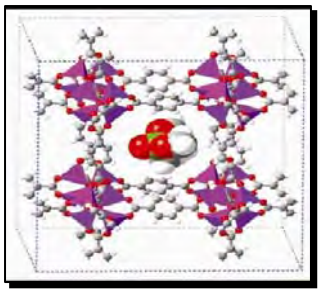
Reduce Logistics Burden
Eliminate Hazardous Material (CLO2, H2O2)

Today

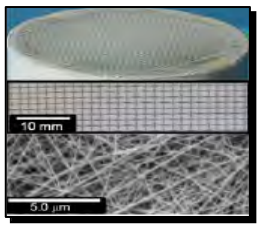
DF200

mVHP, Sensitive Equipment Decon

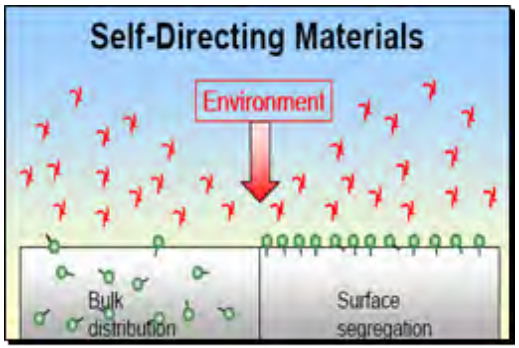
Tomorrow



Advanced Chemistries



Nano-Fibers



Integrated into Platforms

Strippable Barriers
Self-Decontaminating Fabrics/Coatings

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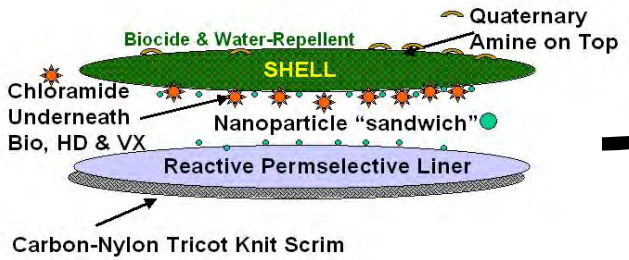
Individual CBRN Protection Vision



Integrated Fabrics

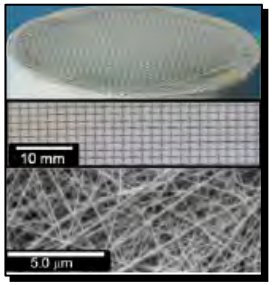
Clothing Design

Integrated Design

Lower Burden

Joint Chemical Ensemble

Human Performance



Air Purification

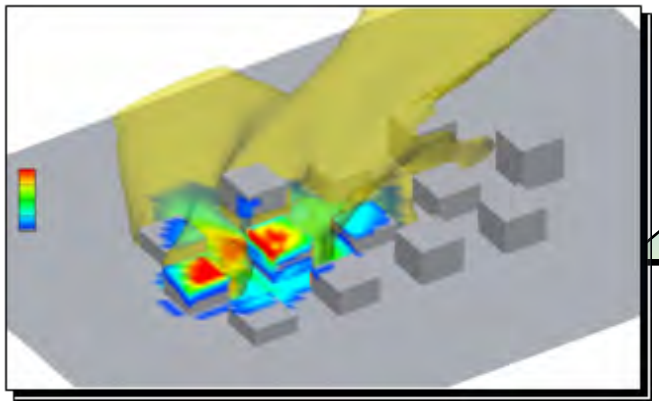
Respirator Design
Modular Concepts

Advanced Threat

Intelligent Materials

Joint CBRN Integrated Information System

Awareness



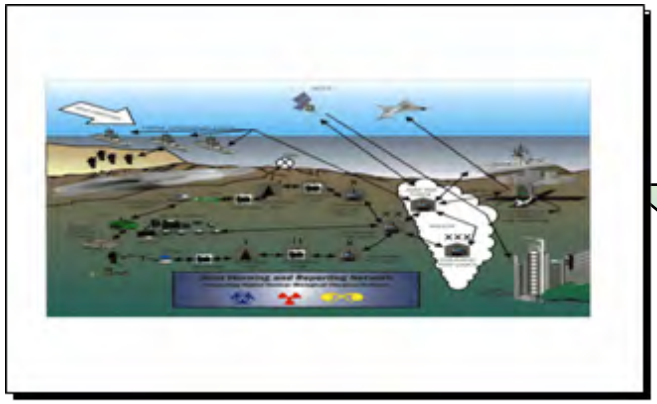
Joint Effects Model (JEM)

Strategic

Operational

Tactical

Information Systems Interoperability



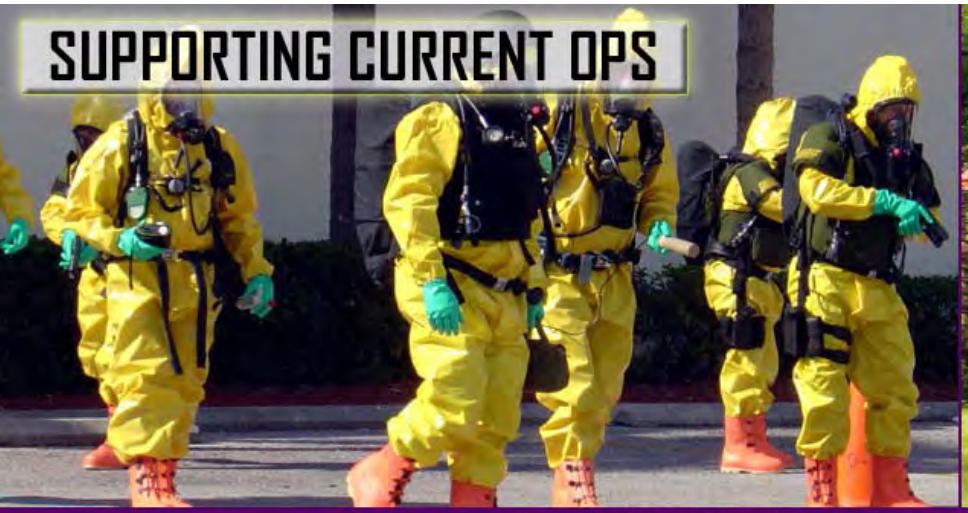
Joint Warning and Reporting Network (JWARN)

Joint Operational Effects Federation (JOEF)

Sensors

CBRN Data Services on Service-Oriented Architecture

The Bottom Line – Return on Investment



DELIVERING WARFIGHTING CAPABILITY

(Best Technology - Right Place and Time)

U.S. Customs and Border Protection

Radiation Systems Evolution

From Counter-Drug to Counter-Terrorism

Joint CBRN Conference

Ft Leonard Wood – NDIA

June 26, 2007

Richard T. Whitman CBP RSO (COL-R, CM, USAR)

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Radiation within the CBP Mission

- This presentation demonstrates how Operational Radiation Safety has assisted the rapid fielding of Non-Intrusive Inspections Systems for the U.S. Customs and Border Protection

- This briefing is for your information and is NOT for attribution.

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Radiation within the CBP Mission

Non-Intrusive Inspection:

- Currently Gamma-Ray or X-Ray/Accelerator

Passive Detection:

- Portal Monitors and ‘self ranging’ devices
- Examination of radiation in commerce

Growth Since 1998

Growth Since 1998

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CBP Radiation Safety Philosophy

Actively Engage Stakeholders:

Unions
Trade Associations (e.g., Film, Port Authorities)
Public Bodies (e.g., CRCPD, OAS)
Department of Defense
CORAR and NEI
US and International Regulators
Concensus Groups: ANSI

Continue to refine current & planned protection

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CBP Radiation Safety Philosophy

Radiation Worker Exposure limits are falling to 40% of current levels

By working with Vendors, CBP exposure limits are 2% of current worker limits

CBP maximum exposures are <1% of limits!

Continue to refine current & planned protection

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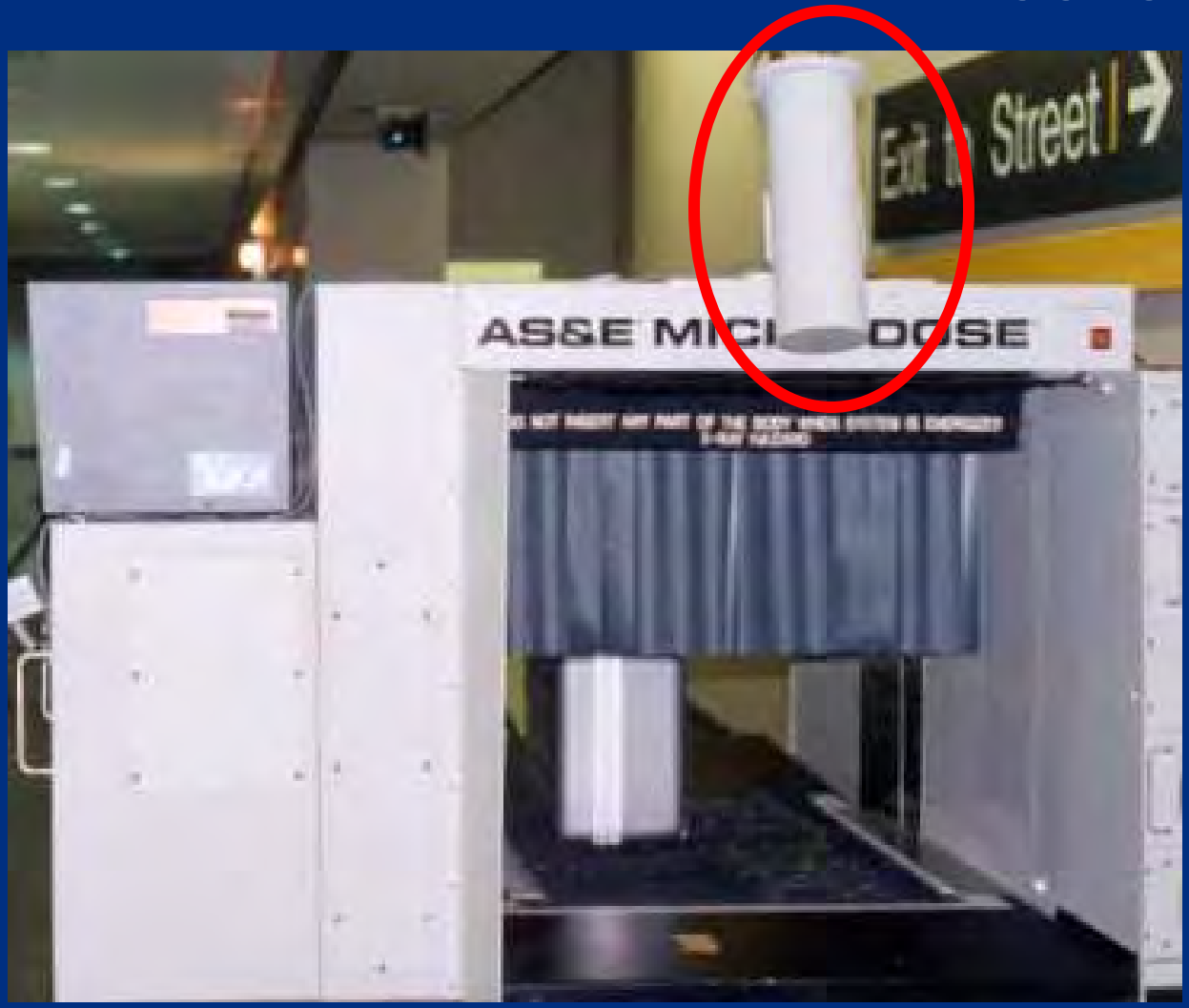
Radiation Detection System Baggage X-ray



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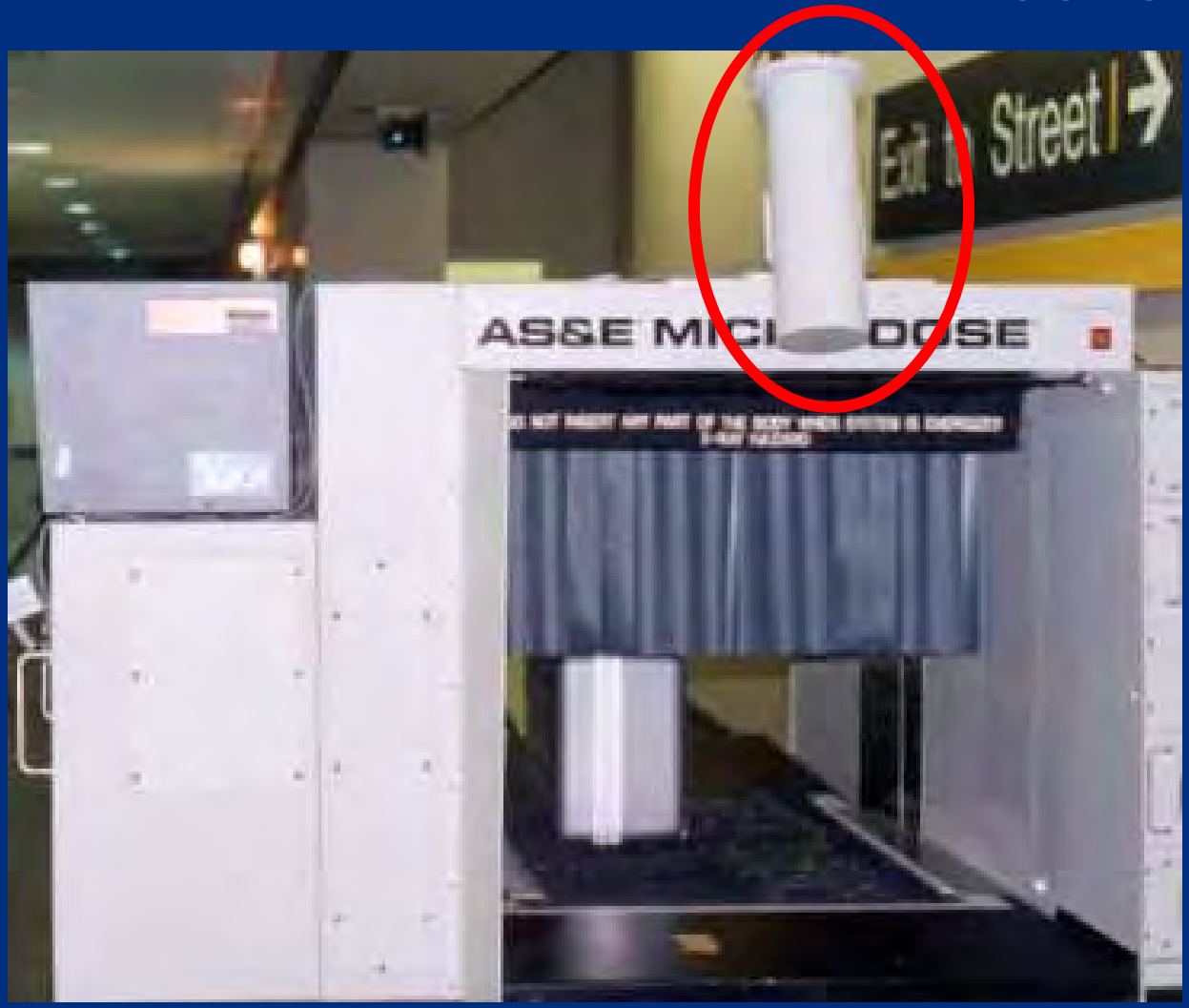
Radiation Detection System Baggage X-ray



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Personal Radiation Detector

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Vehicle and Cargo Inspection System II

(Early models have Cesium-137; later models have Cobalt-60)

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101-X-ray Van

Truck X-ray System

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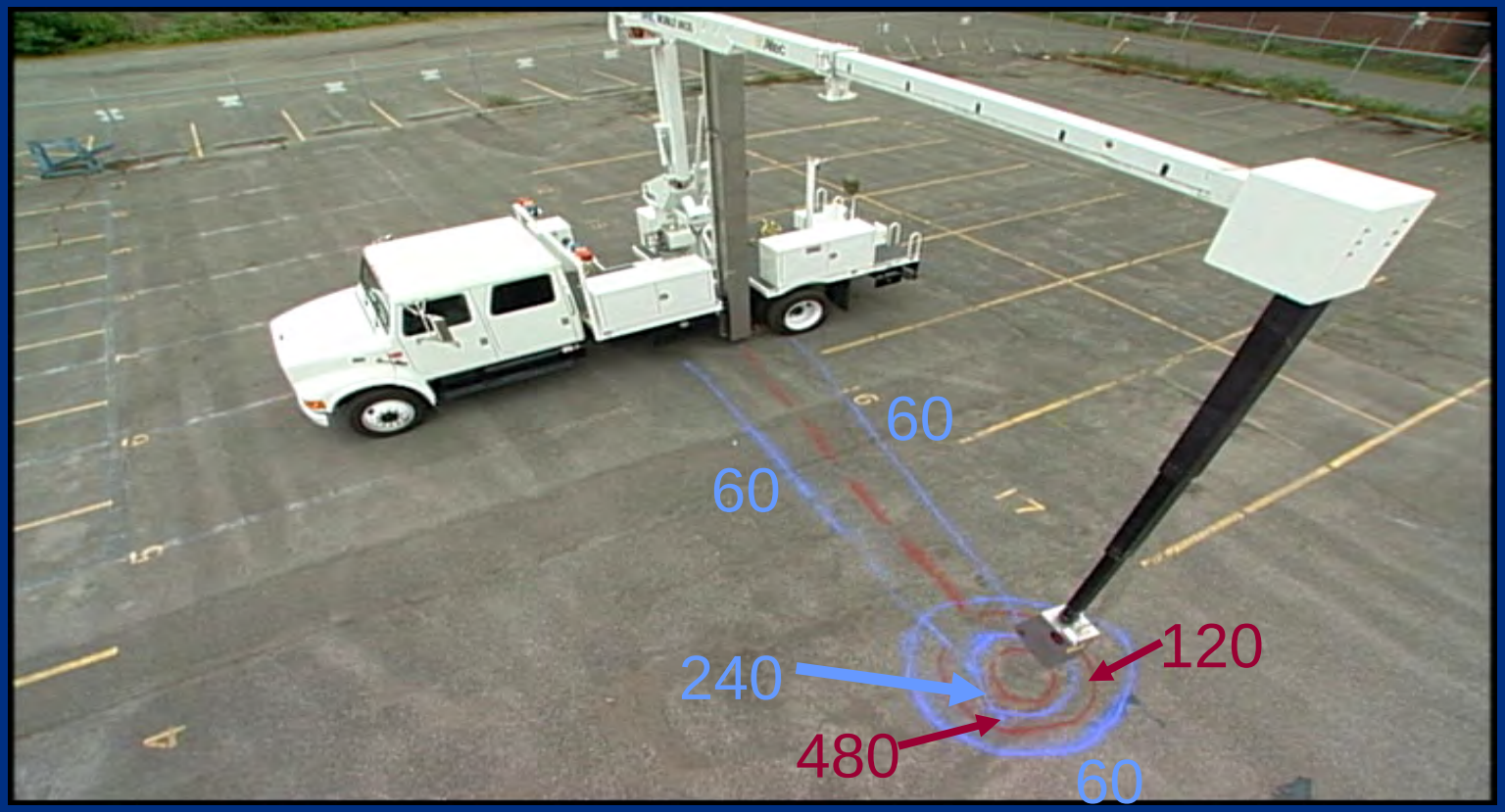
Mobile Truck X-Ray System

Vehicle and Cargo Inspection System

(Early models have Cesium-137; later models have Cobalt-60)

Mapping Radiation Fields (microR/hr)



Mobile Vehicle and Cargo Inspection System

(with Cobalt-60)

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Mobile Vehicle and Cargo Inspection System

(with Cobalt-60)

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CBP Radiation Safety Standard

Small systems and gamma systems

Less than 0.5 microSieverts in any hour

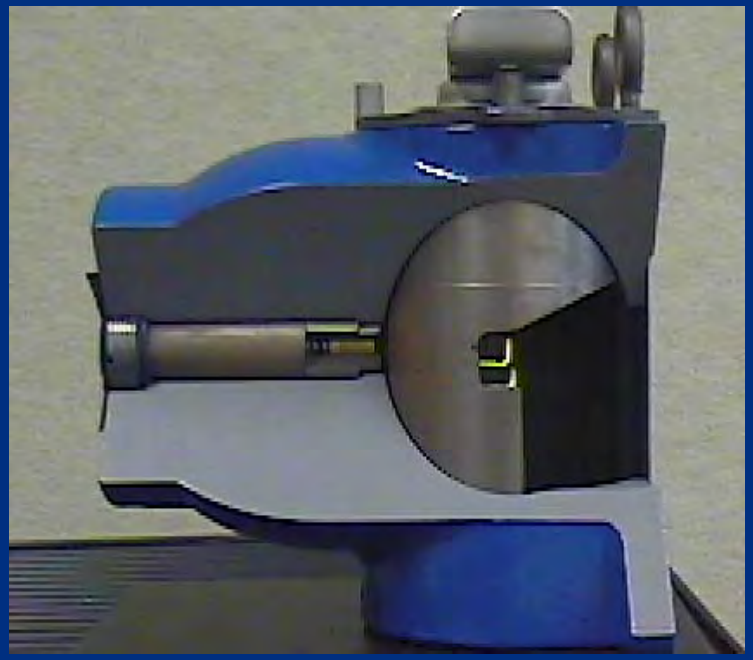
Less than 1.2 microSieverts peak in any hour

Less than .025 microSieverts per pass of any system

Less than 1 milliSieverts in any year

Source Information

Shielding



Source Selection

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Gauge Selection

Typical Gauge Items

CBP Cobalt Gauge Items

Safety Features and Markings

Safety Features and Markings

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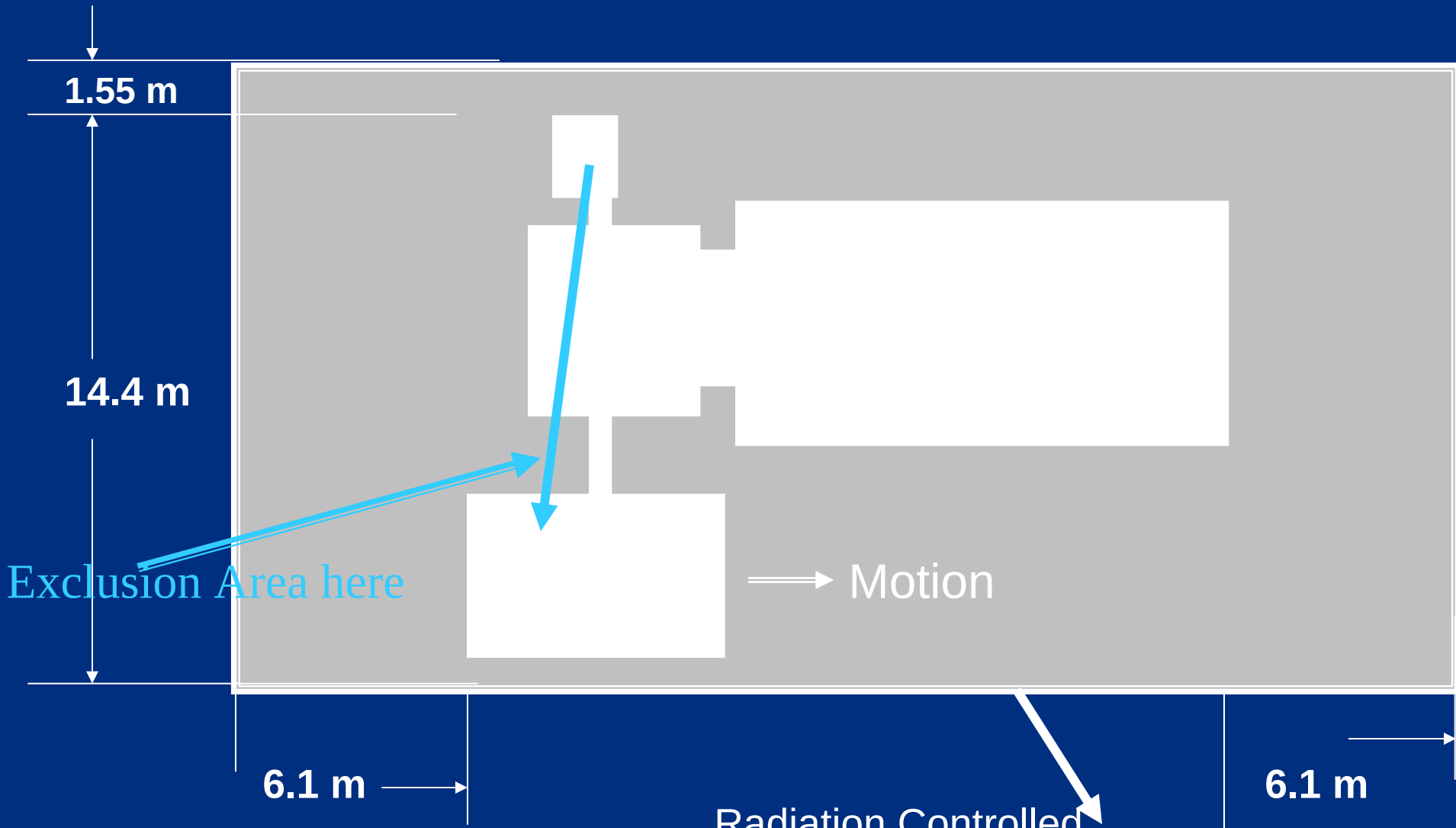
Rolling Scan

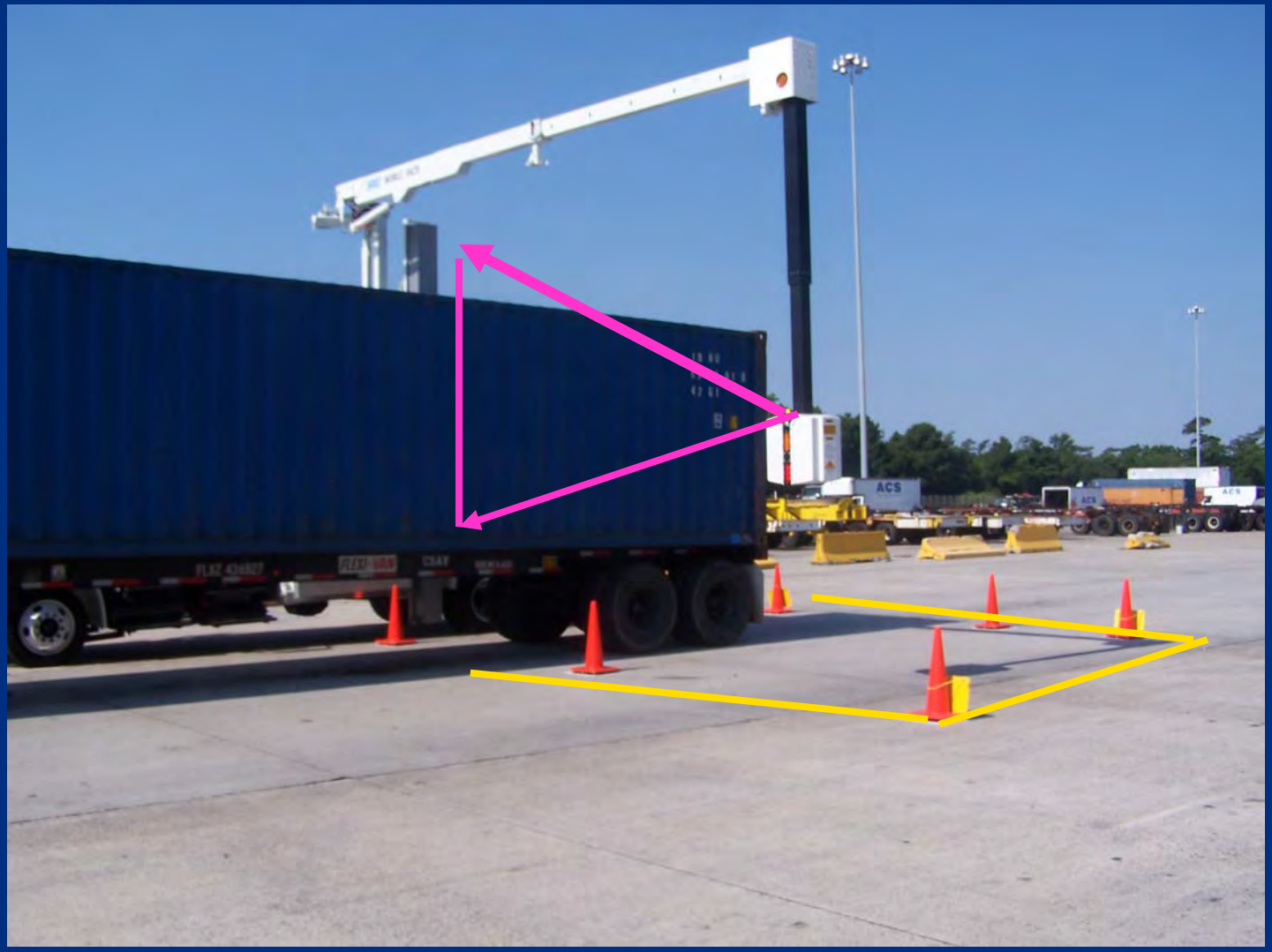


Radiation Portal Monitor System


SAIC MOBILE VACIS
1711
CBP


1711


ACS


ACS


Rapiscan
NITED

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Gamma Ray Inspection System

("Gards" with Cobalt-60)

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Rail Vehicle and Cargo Inspection System (Early models have Cesium-137; later models have Cobalt-60)

Rail Vehicle and Cargo Inspection System (Early models have Cesium-137; later models have Cobalt-60)

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CAUTION
RADIATION AREA
RADIATION MAY BE PRESENT
WHENEVER RED INDICATOR IS ON.
NO ENTRY INTO THIS AREA IS PERMITTED
WHEN RED INDICATOR IS ILLUMINATED.
PRECAUCIÓN
ÁREA DE RADIACIÓN

Pallet Vehicle and Cargo Inspection System

(with Cobalt-60)

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Portal Vehicle and Cargo Inspection System

(Cesium-137)

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Portal Vehicle and Cargo Inspection System

(Cesium-137)

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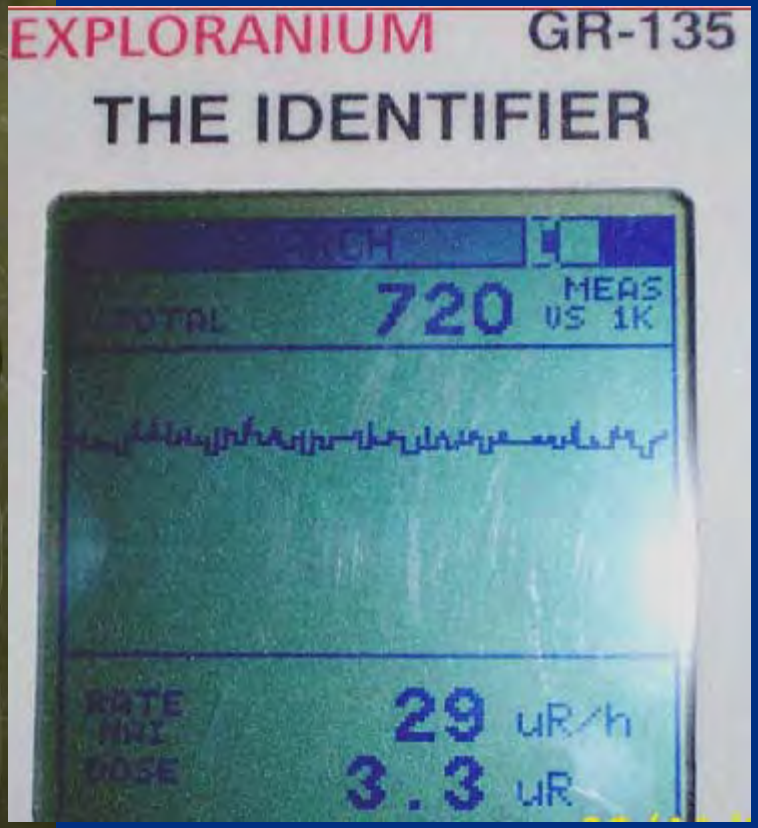
Standard Ionization Meter
(Victoreen 450P and the newer 451P)

Radiation Isotope Identification Device



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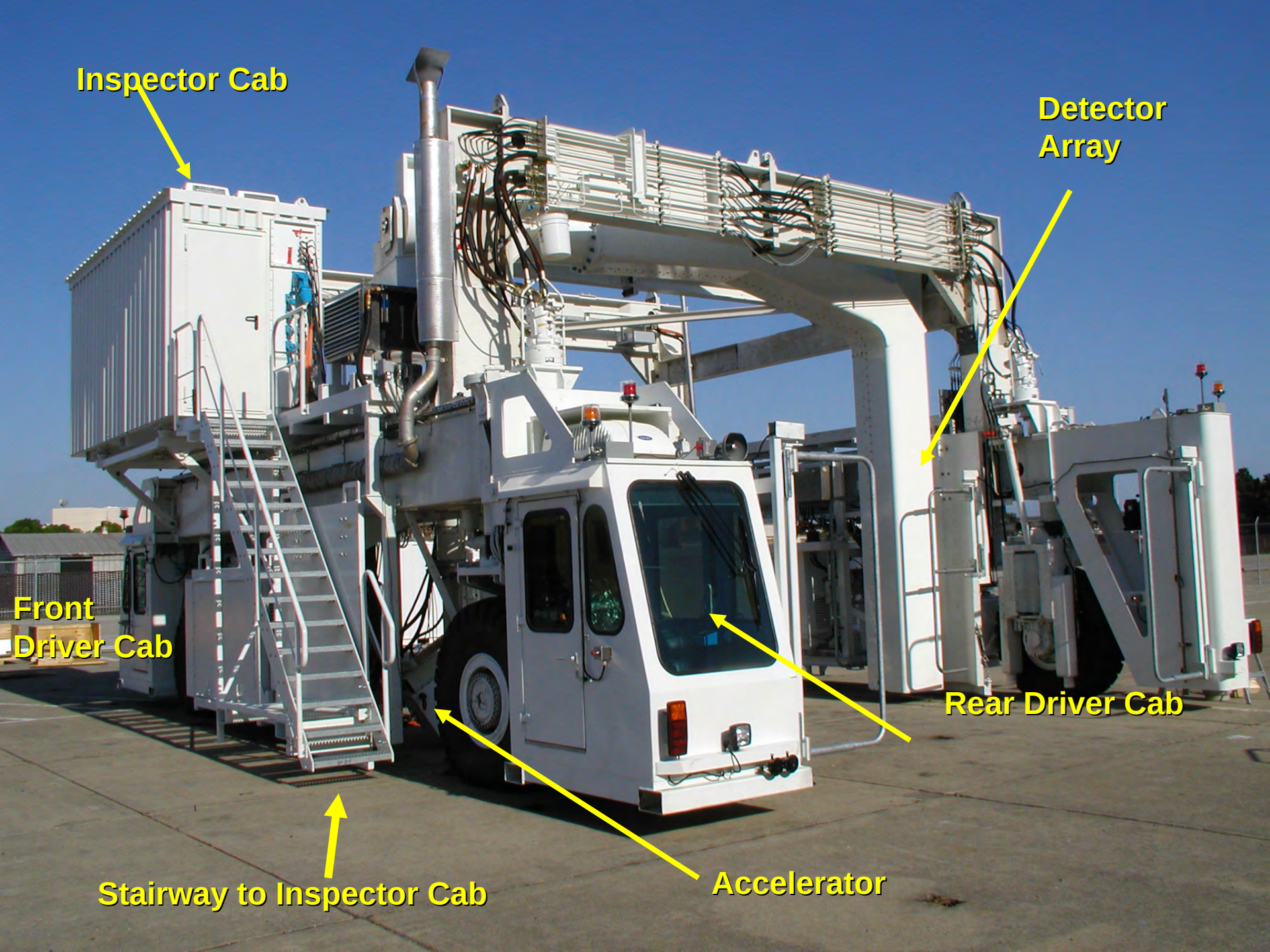
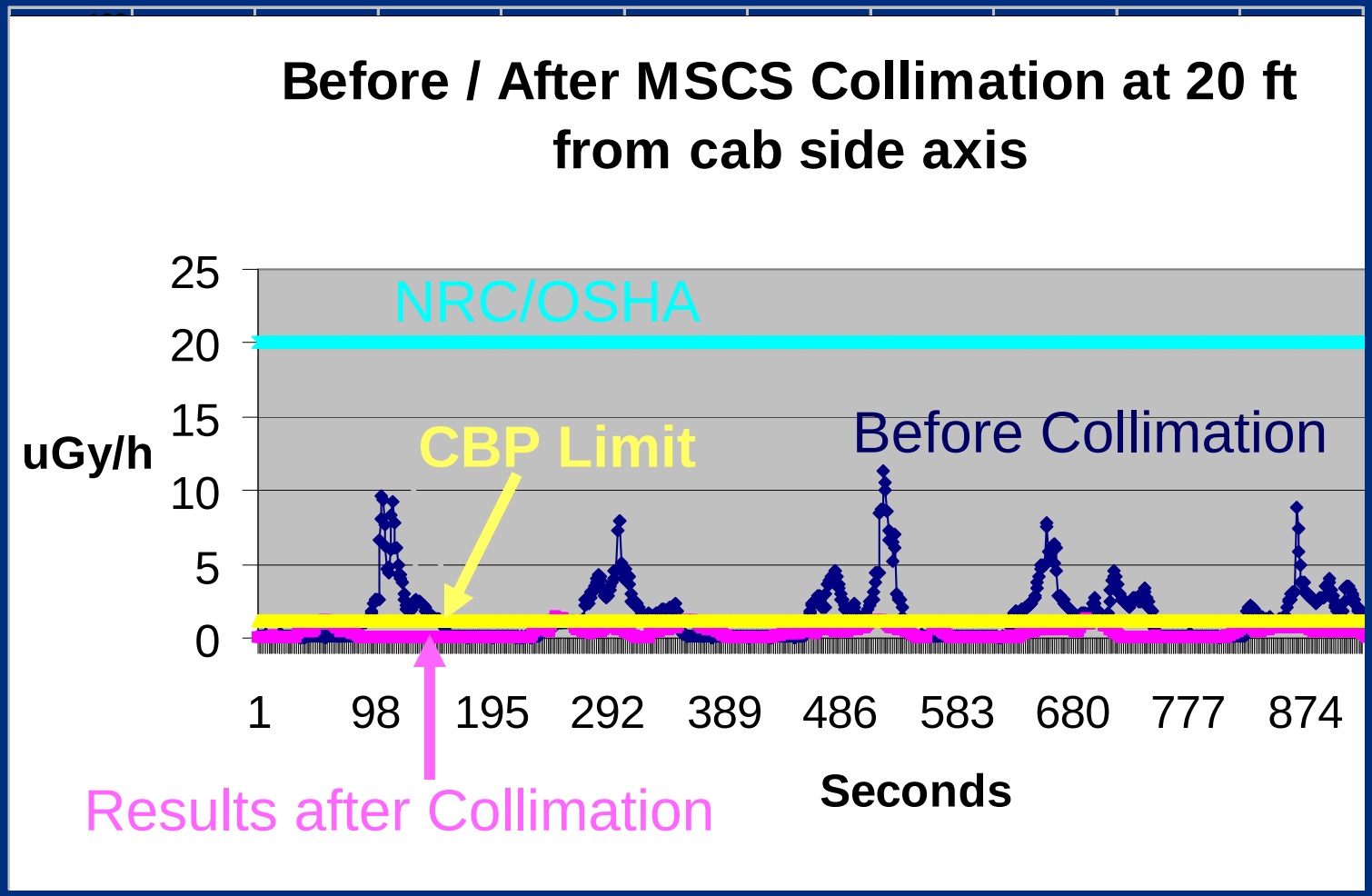
Z-Backscatter X-Ray System

Mobile Sea Container Accelerator System


Inspector Cab
Detector Array
Front Driver Cab
Rear Driver Cab
Stairway to Inspector Cab
Accelerator

Mobile Sea Container Accelerator System


Before / After MSCS Collimation at 20 ft from cab side axis
25
20
15
10
5
0
uGy/h
NRC/OSHA
CBP Limit
Before Collimation
1
98
195
292
389
486
583
680
777
874
Seconds
Results after Collimation

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HCV MOBIL

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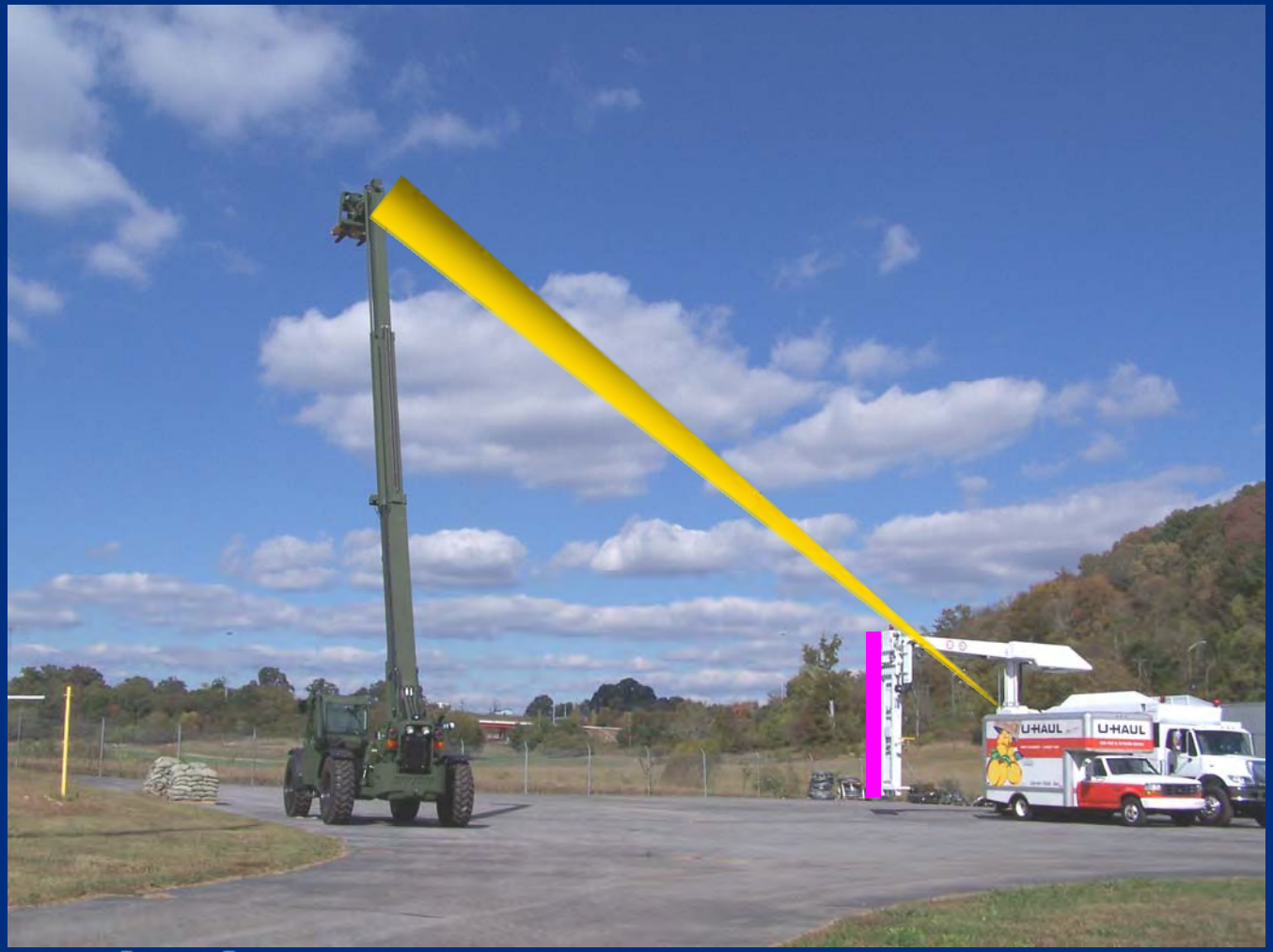

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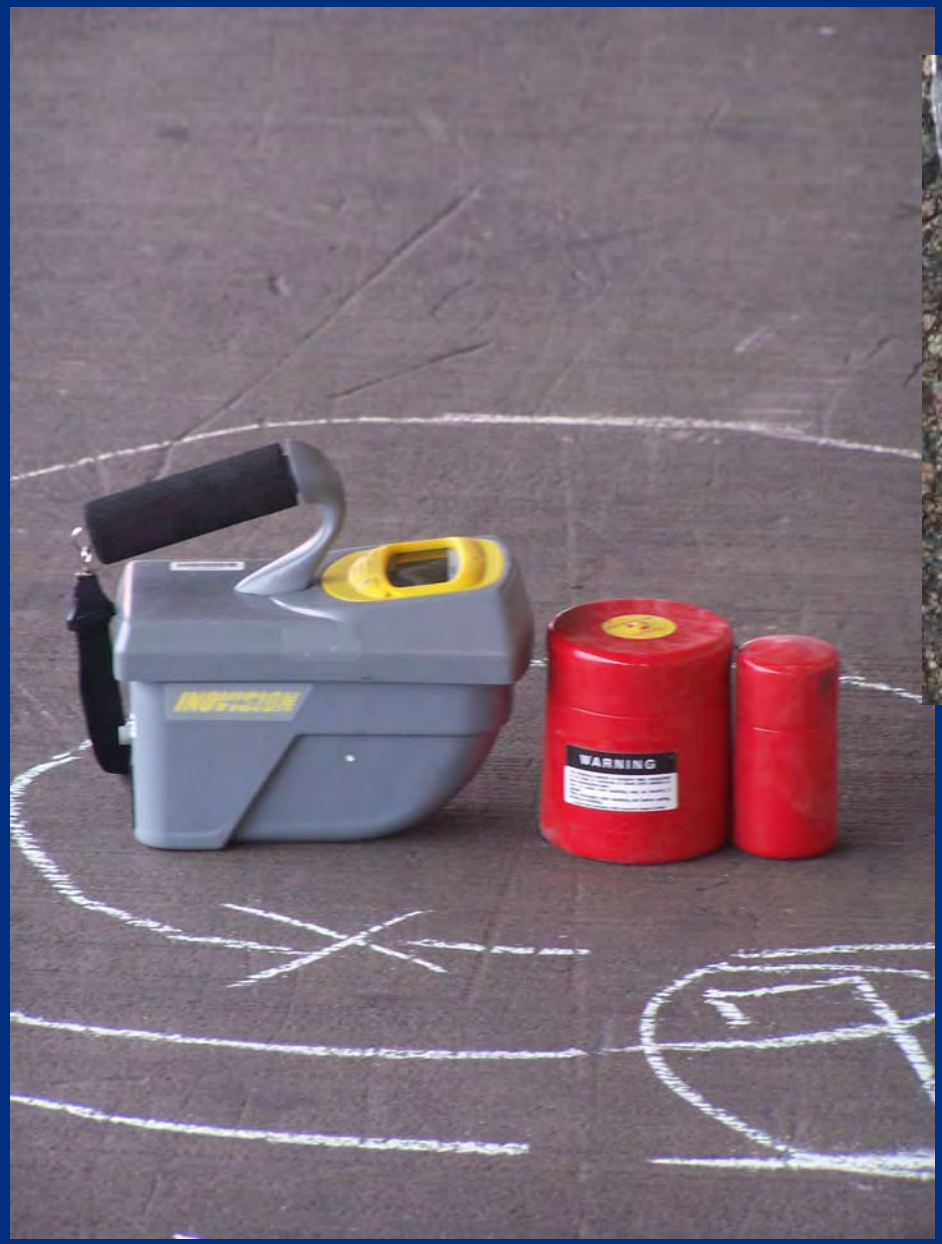
Rail Gantry Accelerator System

(BIR)

Sources For Training



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Program Update

CBP Officer Training
+ Sources
+ New RPMs and reach back
+ Equipment expansion

CBP Radiation Safety Program Growth
+ Additional Staffing
+ NRC and Canadian License

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