



# Joint Non-Lethal Weapons Program

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# Why Non-Lethal Weapons?

They allow the warfighter and political leadership important new options for conducting operations in the 21<sup>st</sup> century

**MILITARY  
PRESENCE**

**CAPABILITY GAP**

**LETHAL  
FORCE**

*Force Continuum*



*Target selected  
individuals*



*Clear facilities*



*Control group  
movements*



*Neutralize without  
Destroying*



# Increasing the Engagement Space and Engagement Time

*Non-Lethals facilitate discrimination*

Determine intent at a greater range  
Engage at a greater distance

**Detect**

**Delay**

**Deny**

**Defeat**

**Destroy**

— NLWs  
— Lethal only

**Destroy**

STANDOFF





From this....

**Why Non-Lethals?**

**Why the Marine Corps?**

- Somalia... a call for NLWs
- General Zinni's Congressional Testimony
- CMC's willingness to serve as Exec Agent
- Understanding the battlespace... *air, land, sea*

***From Rubber bullets... to Directed Energy***

.... To this





## DoD NLW Definition

Weapons that are explicitly designed and primarily employed so as to *incapacitate personnel or materiel*, while *minimizing fatalities*, permanent injury to personnel, and *undesired damage* to property and the environment.



# Guidance

## **National Defense Authorization Act for FY 96**

“The Secretary of Defense shall assign centralized responsibility for development (and any other functional responsibility the Secretary considers appropriate) of nonlethal weapons technology to an existing office within the Office of the Secretary of Defense or to a military service as the executive agent.”

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## **Office of the Under Secretary of Defense, 22 March 1996 Memo**

“The Commandant, US Marine Corps will serve as the Executive Agent (EA) for the NLW Program.”

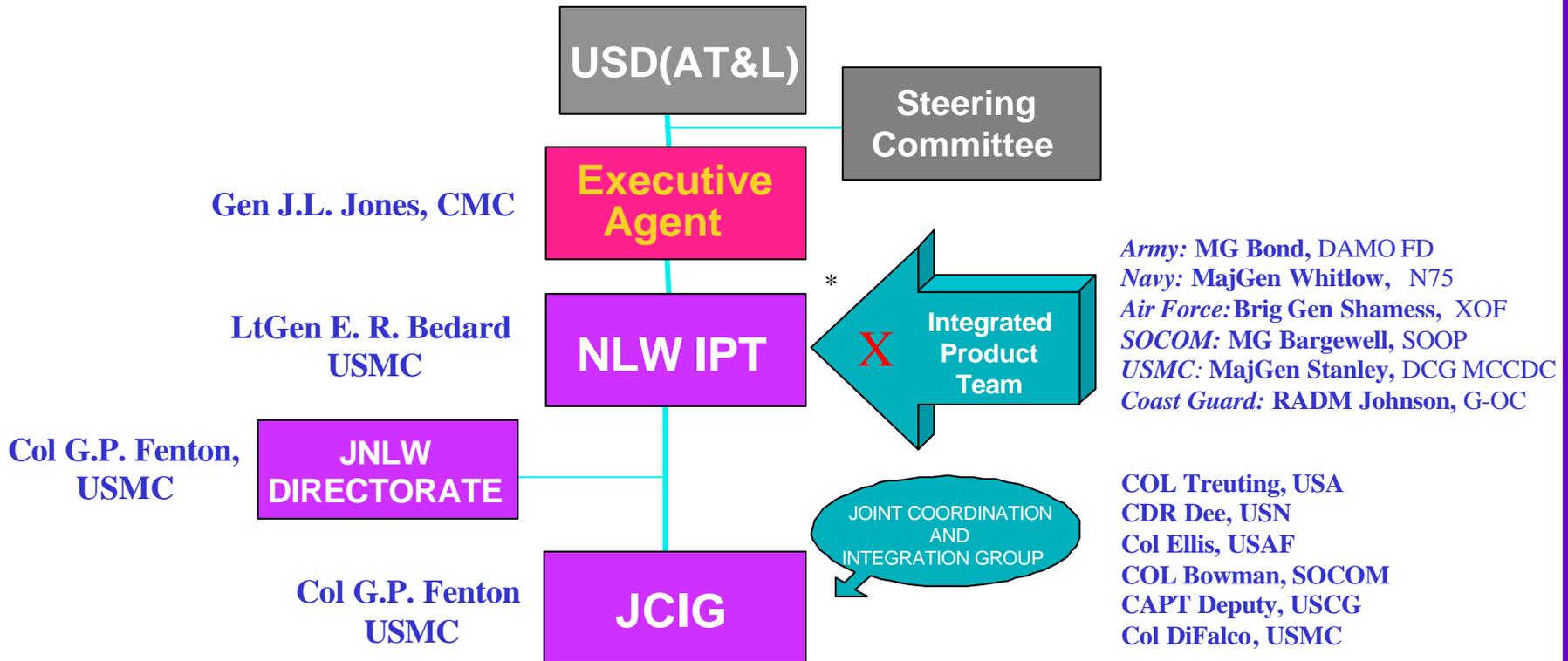
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## **DoD Directive 3000.3, dated 9 Jul 96**

“Applies to all non-lethal weapon development and acquisition programs and the employment of fielded non-lethal weapons.”



# JNLW Management Structure



**X:** Non-Voting Members - DOS, DOJ, DOE, Joint Staff/J8, CINCs & OSD

\* *Integrated Product Team provides guidance and approves JNLWP expenditures*



## About the JNLWD

- Established as a Jointly Manned Activity
- Serves as the focal point for DoD NLW Program
- Serves as the Executive Agent's day to day management office
- Provides R&D funding to Milestone C



# Budget

	<b>FY99</b>	<b>FY00</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>	<b>FY05</b>
<b>Core</b>	\$21.9M	\$22.8M	\$22.1M	\$23.6M	\$24.4M	\$26.3M	\$26.8M
<b>Plus-Up</b>	\$12.0M*	\$3.0M*	\$6.0M*	\$11.8M**			
<b>Total</b>	<b>\$33.9M</b>	<b>\$25.8M</b>	<b>\$28.1M</b>	<b>\$35.4M</b>	<b>\$24.4M</b>	<b>\$26.3M</b>	<b>\$26.8M</b>

\* Congressional

\*\* DOD Force Protection

## Major Budget Categories

Acquisition

Concept Exploration

Advanced Concept Technology Demonstrations

Pre-Milestone A

Technology Investment

Studies & Analysis

Experimentation

Modeling & Simulation

Other Activities



# Non-Lethal Weapons Core Capabilities

## Counter-personnel

- **Crowd Control**
- **Incapacitate Individuals**
- **Deny Area to Personnel**
- **Clear Facilities/Structures/Areas**



## Counter-materiel

- **Area Denial to Vehicles (land, sea, and/or airspace)**
- **Disable/Neutralize Vehicles, Vessels, Aircraft, & Equipment**



# Today: Non-Lethal Weapon Capability Sets

## Tactical Success



### Nonlethal Munitions

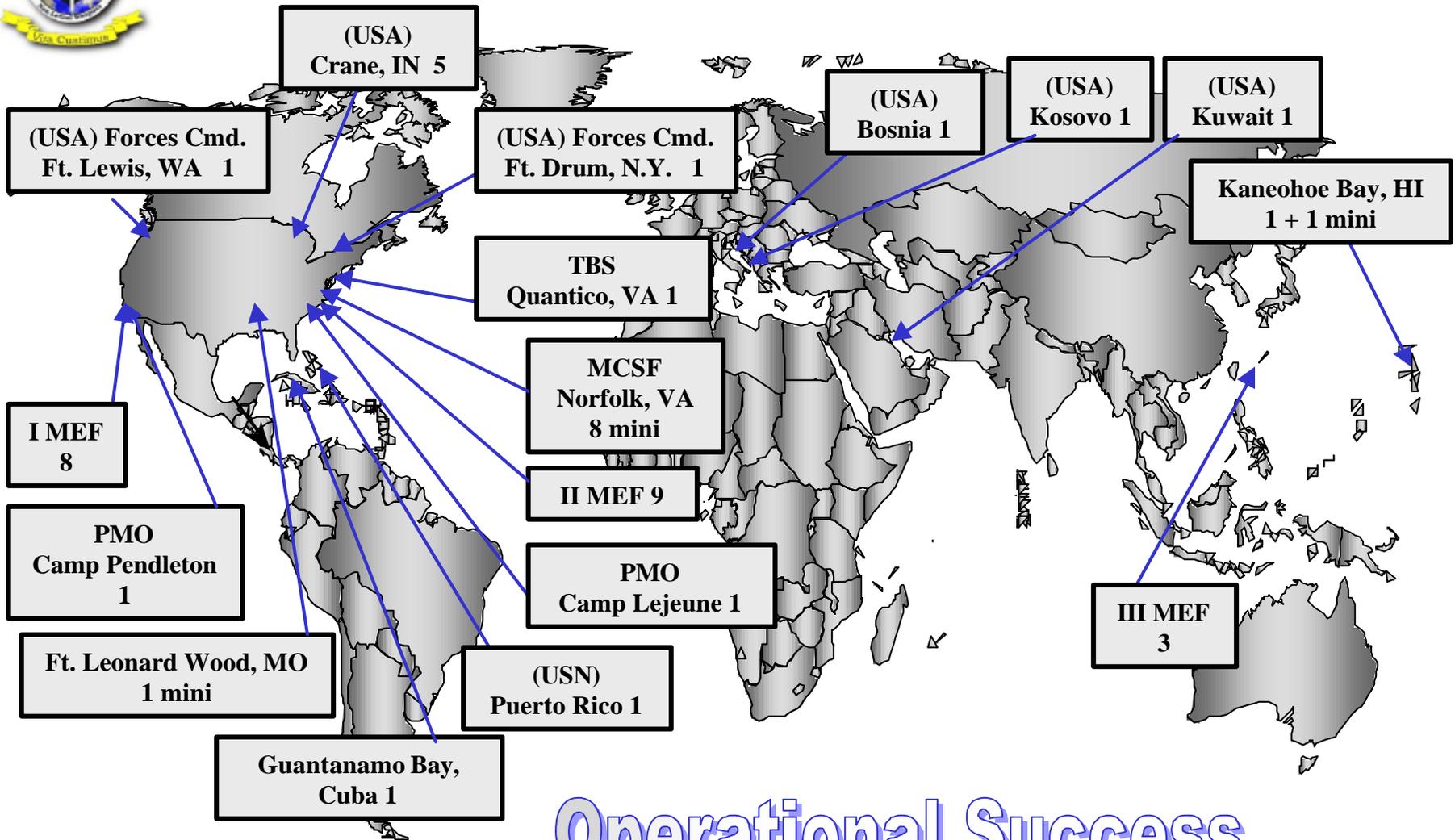
- 12 Gauge Point, Area & Flash Bang
- 40mm Point & Area Rounds
- 5.56mm Area Muzzle Launched Ordnance
- Stun Grenade
- Stingball Grenade
- Handheld Dye Marker
- Modular Crowd Control Munition

### Other Items

- 12 Gauge Shotguns
- Mid-Size Riot Control Dispenser
- Large Riot Control Dispenser
- Re-Supply Quantity of (OC) Pepper Spray
- Caltrops
- 12 Gauge & 40mm Ammunition Pouches
- 12 Gauge Stingball Grenade Launching Cup



# Non-Lethal Capability Set Locations



Operational Success



Within One Year

**Tactical Success**

**Portable Vehicle Arresting Barrier**  
Material Release: 3QFY02



**40mm NL Crowd Dispersal Cartridge**  
Material Release: 3QFY02



**66mm Vehicle Launched  
NL Grenades**

Material Release: 2QFY03



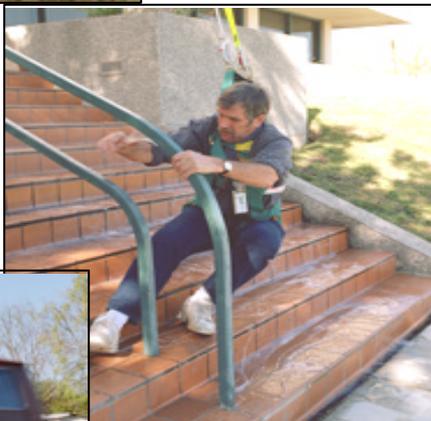


Within One to Five Years

**Tactical Success**

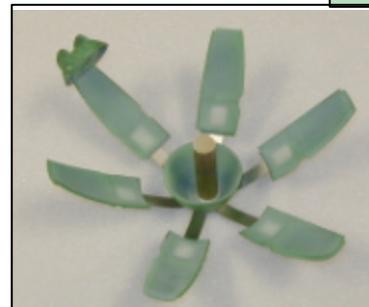
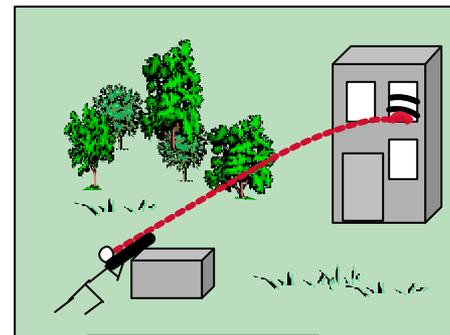
**Mobility Denial System**

**Material Release: 3QFY05**



**Clear A Space Device**

**Material Release: FY05 (estimated)**





# Other Tactical Programs

*(Requirements Pending)*

- **Mk 19 40mm Munitions**
- **Objective Individual Combat Weapon NL Round**
- **NL Mortar Muniton**
- **Running Gear Entanglement System**





# Within One to Five Years

## Active Denial System ACTD

1 residual HMMWV ADS: 2QFY05

**Program Description:** The ADS ACTD will demonstrate a compact, self contained, mobile, high-energy millimeter-wave system prototype integrated on a HMMWV platform

### **Capability Features:**

- Heats skin to depth of 1/64th inch
- Universal Effects beyond effective small arms range
- Intolerable pain sensation
- Target repel immediate

**CINC Sponsor:** JFCOM

**Executing Agent:** JNLWD

**Operational Manager:** Air Force/ACC

**Transition Manager:** Air Force /ESC

**Technical Manager:** Air Force Research Lab/DE

**Other Service Participation:** Army, Marine Corps, and Navy



**Transformational**

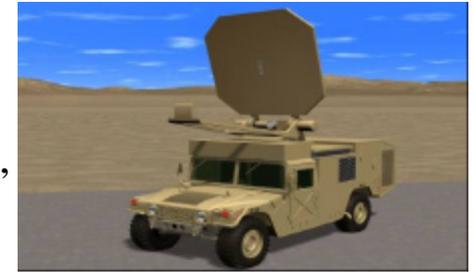


# JNLWP FY-02

## Force Protection Supplemental (PBD 810)

### Active Denial Technology (\$7.8M)

- Ongoing directed energy technology used to repel belligerents.
- Additional funding to be used to advance prototype hardware, ruggedizing, packaging, and effects research



### NLW's for Navy Force Protection (\$0.8M)

- Evaluate NL technologies for ship and force protection to include barrier technologies to stop small vessels at standoff distances
- Additional funding is for engineering and demonstration of variable launch / deployment options



### Blunt Impact & Pulsed Projectile Effectiveness (PEP) Research (\$1.4M)

- Development of a directed energy crew served NLW to deliver controlled blunt impact effect on human targets at extended ranges
- Ongoing research and modeling also applicable to effectiveness assessment of existing blunt impact munitions on a target
- Additional funding for more robust effectiveness models, resulting in quantifiable effectiveness data



### Standoff Delivery of NLW's (\$0.4M)

- Currently U.S. forces do NOT possess the capability to stop / deter aggressive individuals / crowds beyond small arms range without using deadly force
- Funding used to conduct a study to identify specific delivery systems to deliver NL payloads beyond 800m



# Current Technology Investment Projects

	Due Date	Deliverables
<p><b><u>NL Loitering Submunition</u></b> -CONOPS &amp; NL payload study of loitering submunition</p>		1QFY02 Report
<p><b><u>Front End Analysis of RCAs</u></b> -Workshops, analysis and database of all potential Riot Control Agents, calmatives, etc., in the last 10 years</p>	3QFY02	Report
<p><b><u>Thermobaric Tech.</u></b> -Assess potential of thermobaric technology for non-lethal applications</p>	3QFY02	Report
<p><b><u>Veiling Glare Laser</u></b> -Determine and demonstrate ability of a violet laser to create a veiling glare on an excised human cadaver lens</p>	3QFY02	Report



## “Beyond the Rubber Bullet Modality”

*“As the Department of Defense Executive Agent for the Joint Non-Lethal Weapons Program, I intend to meet this challenge by pursuing the development of a new generation of non-lethal weapons - an effort to leverage 21st Century technology to enable our warfighting CinCs to capitalize on a full-spectrum non-lethal capability.”*

General James L. Jones

Commandant of the Marine Corps

August 1999



# Beyond The Rubber Bullet...

## Advanced Tactical Laser

**Program Description:** The ATL ACTD will demonstrate a modular, high-energy laser weapon to conduct ultra-precision strike missions capable of deployment on a C-130.

**CINC Sponsor:** USSOCOM

**Operational Manager:** AFSOC

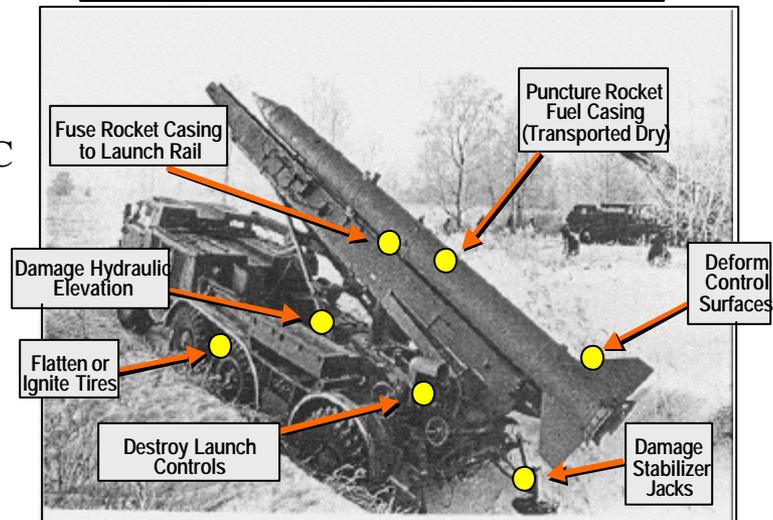
**Transition Manager:** USSOCOM PEO Fixed Wing

**Technical Development Agent:** AFRL/DE

**System Engineering and Integration Agent:** Army SMDC

**Non-Lethal Applications Support:** JNLWD

**Transformational**



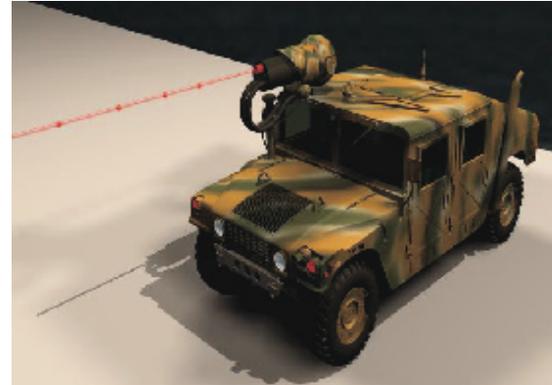


# Beyond the Rubber Bullet...

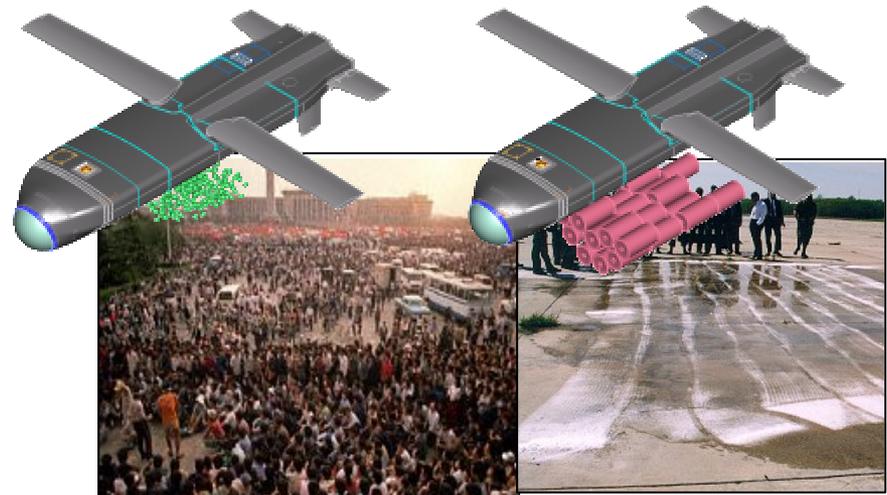
## Airborne Active Denial



## Pulsed Energy Projectile



## Long Range Delivery





# Other JNLW Activities

## Studies & Analysis

Human Effects

Center of Excellence

Review Board

Advisory Panel

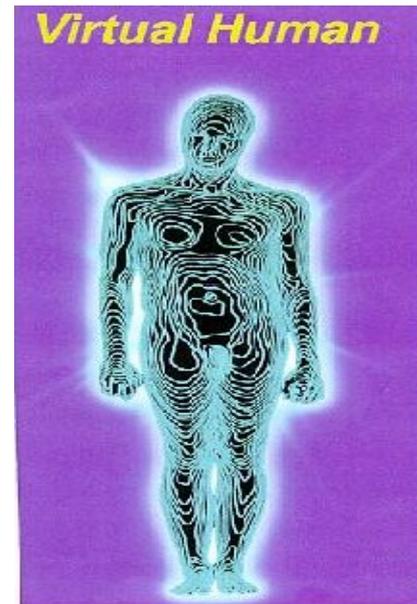
NATO MOE Study

Military Worth Analysis

## Modeling & Simulation

Joint Conflict and Tactical  
Simulation (JCATS)

Human Effects Models





# Program Summary

- The JNLW Program has accomplished much since 1997:
  - Operational Success with Fielded NL Capability Sets
  - 6 New Acquisition Programs; 4 in production
  - Advancement of Directed Energy Technology
  - DepSecDef designation as a Jointly Manned Activity
  - Warfighting CinC visits to discuss JNLW program and requirements generation
  - JROC endorsed Joint Mission Area Analysis
  - Joint Mission Need Statement for Non-Lethal Capabilities in staffing
- Much remains to be done to move beyond the “rubber bullet modality”:
  - Both “Top Down” Guidance and “Bottom Up” Acceptance will be necessary