Escalation of Force Challenges and Technology Investment Areas

Joint Missions Conference
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Combatants Embedded within Civilian Population

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Uncertain Situations…
Consequence Management...
Spectrum of Response

What capabilities do we have, what capabilities do we need?

Target selected individuals
Clear facilities
Control group movements
Neutralize without Destroying

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Department of Defense (DoD) Non-Lethal Weapons (NLW) Program

- Established in 1996 with the Commandant of the Marine Corps as the designated DoD NLW Executive Agent

- The Joint Non-Lethal Weapons Directorate serves as the Executive Agent’s day to day management office, coordinating activities with the Services, Coast Guard, and other government agencies

- The Executive Agent has a research budget dedicated to developing and advancing the suite of NLW available to U.S. forces

- The military Services (Army, Air Force, Navy, Marine Corps) are responsible for NLW procurement and sustainment
DoD NLW Management Structure

USD(P) Policy Oversight
USD(AT&L) Principal Oversight
DoD NLW Program Executive Agent CMC

DoD Non-Lethal Weapons Program

Chairman, JNLW Integrated Product Team (DC PP&O)

Joint Non-Lethal Weapons Program

Joint Non-Lethal Weapons Directorate

Joint S&T Joint R&D

Service S&T Service RDT&E Service Procurement Service O&M

Direct Oversight Coordination
DoD NLW Definition

“Weapons, devices and munitions that are explicitly designed and primarily employed to incapacitate targeted personnel or materiel immediately, while minimizing fatalities, permanent injury to personnel, and undesired damage to property in the target area or environment. Non-lethal weapons are intended to have reversible effects on personnel and materiel.”

JNLWP Focus

Key Attributes: Incapacitation and Reversibility
Non-Lethal Weapons Efforts in the United States

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JNLWP Support of Service NLW Fieldings

1996
USMC NL Capability Set Fielding Begins

1998
USA NL Capability Set Fielding Begins

2000
NLWs deployed to Kosovo

2001
40mm NLM Fielding Begins
Portable Vehicle Arresting Barrier Fielding Begins
Modular Crowd Control Munition Fielding Begins

2004
NLWs for Haiti; OIF
Vehicle Lightweight Arresting Device M2 Net Urgently Fielded & Used Operationally
VLAD M2 Nets, FN303, M/X26 Taser, Acoustic Hailing Devices Urgently Fielded

2006
GBD-IIIC Laser Dazzlers and M/X26 Tasers Urgently Fielded for OIF

2007
Running Gear Entanglement Systems Deployed
USAF and NGB NL Capability Set Fielding Begins

2008
Joint NL Warning Munitions Urgently Fielded

2011
X26 Taser Milestone C
Improved Flash Bang Grenade Contract Award
Long Range Optical Interruption Milestone Development Decision
Current Acquisition Programs

Counter-Personnel Capability Gaps
Suppress, Move and / or Deny Individuals / 1-100 Meters

- Airburst NL Munition
  - USA Lead
  - Milestone C: FY12

- Improved Flash Bang Grenade
  - SOCOM Lead
  - Milestone C: FY13

- Mission Payload Module
  - USMC Lead
  - Milestone C: FY15

Counter-Materiel Capability Gaps
Stop Vehicles, Stop Vessels, & Deny Access to a Facility

- Single Net Solution
  - USA Lead
  - Milestone C: FY12

- M2 Net

- Vehicle Lightweight Arresting Device (VLAD) Single Net Solution (SNS) & Remote Deployment Device (RDD)

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Near-Term Technology Challenges

**Counter-Personnel Capabilities**
Suppress, Move, & Deny Individuals

- Optical Distractors & Acoustics
- Commercial Off-the-Shelf Human Electromuscular Incapacitation Devices
- Advanced Materials for Non-lethal Projectiles

**Counter-Materiel Capabilities**
Stop Vehicles, Stop Vessels, & Deny Access to a Facility

- Electrical Vehicle Stopping
- Entanglement Devices
Mid-Term Technology Challenges

Counter-Personnel Capabilities
Suppress, Move, Deny & Disable Individuals

- Long Range Human Electro-Muscular Incapacitation
- 40 MM HEMI Projectile
- Sheet Beam Klystron
- Active Denial Technologies
- Malodorants

Counter-Materiel Capabilities
Stop/Disable Vehicles, Stop/Disable Vessels, Stop/Disable/Divert Aircraft

- Directed Energy Vehicle / Vessel Stoppers
Far-Term Technology Challenges

Counter-Personnel Capabilities

Suppress, Move, Deny & Disable Individuals

- Nanosecond Electrical Pulses for LR HEMI
- Solid State Arrays
- Active Denial Technologies
- Synergistic NL Effects T&E Suite
- Laser-Induced Plasma Effects

Counter-Materiel Capabilities

Stop/Disable Vehicles, Stop/Disable Vessels, Stop/Disable/Divert Aircraft

- Long Range DEW Vehicle Stoppers
- NL UAV - High Power Microwave
- Counter Aircraft Capabilities
Near Term Investment Considerations

• Broad Agency Announcement (BAA) used to communicate science and technology challenges / knowledge gaps
  • Topics focused on Counter-Personnel and Counter-Materiel applications capable of reversible effects and human effects research to support effectiveness and safety evaluations
  • Release planned for latter half of September
• FY12 BAA soliciting applied research and advanced technology development proposals in the following areas:
  • Nanosecond Electrical Pulses
  • Clear-a-Space Technologies
  • Advanced Materials and Payloads
  • Mild Traumatic Brain Injury Thresholds/Modeling
  • Laser Induced Plasma Effects
  • Academic Research/Outreach Coordination
• For more information please visit:  http://jnlwp.defense.gov