



# DoD Non-Lethal Weapons Program Joint Non-Lethal Weapons Directorate (JNLWD)



## Brief to Small Arms Systems Program 14 May 2014



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# Topics



- Capabilities Based Assessment (revision)
- Joint Integration Program Update
- Current Programs of Interest:
  - Individual Non-lethal System / Non-Lethal Small Arms
  - XM-7 Spider Non-Lethal Launcher
  - Disable Point Target / Human Electro-Muscular Incapacitation
  - XM-1116 Extended Range Marking Munition



# Joint Non-Lethal Effects Capabilities Based Assessment (CBA)

- **Military Problem** - The Joint Force Commander, operating throughout the range of military operations and in complex environments, lacks sufficient capability to immediately neutralize or incapacitate targets without causing permanent injury, death, or gross physical destruction. These effects are often associated with targets of unknown intent or targets that cannot be addressed with lethal weapons due to the potential for unacceptable collateral damage.
- **CBA Scoping Parameters**
  - Capabilities that are explicitly designed and primarily employed to incapacitate targeted personnel or materiel, while minimizing fatalities, permanent injury to personnel, and undesired collateral damage in the target area or environment.
  - Capabilities that deliver a level of force that achieves immediate target response.
  - Capabilities that are intended to provide predictable and reversible effects.
- Tasks were derived through analysis of Major Combat Operations and Homeland Defense Scenarios



# CP Tasks, Conditions and Standards

CP Tasks
<ul style="list-style-type: none"> <li>• Deny Access Into/Out of an Area to Individual</li> <li>• Move Individuals Through an Area</li> <li>• Disable Individuals</li> <li>• Suppress Individuals</li> </ul>

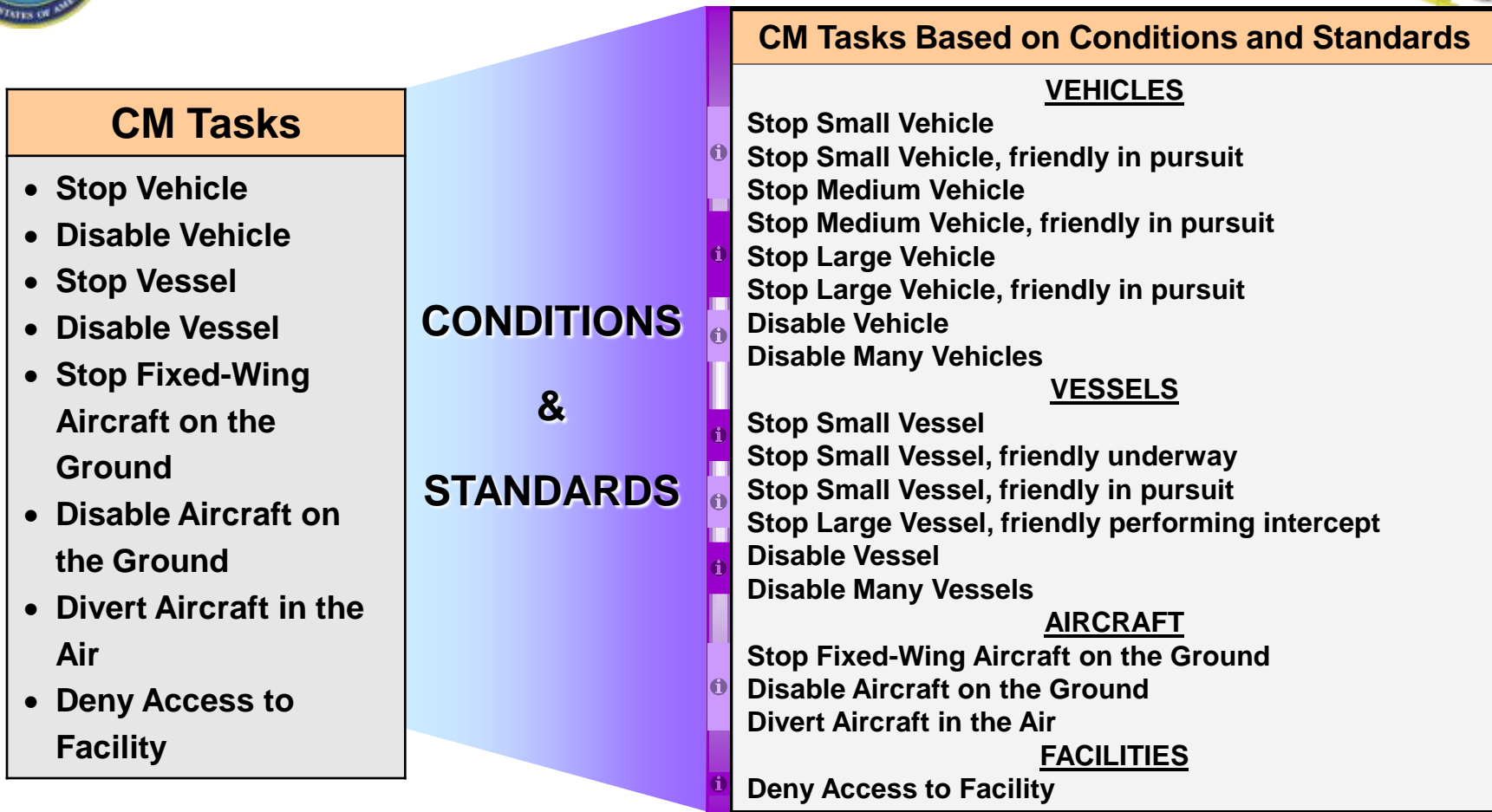
**CONDITIONS  
&  
STANDARDS**

CP Tasks with Conditions and Standards
<b><u>DENY</u></b>
Deny Access into/out of an Area to Individuals (Open; Single/Few/Many)
Deny Access into/out of an Area to Individuals (Confined; Single/Few/ Many)
Deny Access into/out of an Area to Individuals (Underwater; Single/Few/ Many)
<b><u>MOVE</u></b>
Move Individuals Through an Area (Open; Single/Few)
Move Individuals Through an Area (Open; Many)
Move Individuals Through an Area (Confined; Single/Few)
Move Individuals Through an Area (Confined; Many)
<b><u>DISABLE</u></b>
Disable Individuals (Open; Single)
Disable Individuals (Open; Few)
Disable Individuals (Open; Many)
Disable Individuals (Confined; Single/Few)
Disable Individuals (Confined; Many)
<b><u>SUPPRESS</u></b>
Suppress Individual (Open; Single)
Suppress Individuals (Open; Few)
Suppress Individuals (Open; Many)
Suppress Individuals (Confined; Single/ Few)
Suppress Individuals (Confined; Many)
Suppress Individuals (Underwater; Single)

**NL CP tasks: Incapacitating and reversible effects against individuals with the intent of not causing permanent injury.**



# CM Tasks, Conditions and Standards



**NL CM tasks:** Intent is incapacitating and reversible effects against materiel (e.g., vehicles, vessels, aircraft, buildings, etc.), that do not cause gross physical destruction (or lethality to personnel).



# NLE Conditions and Standards



## NL Conditions

- **Domain** (Air, Land and Maritime)
- **Day/Night**
- **Weather**
- **Space** (Open, Confined and Underwater)
- **Target Density** (Single, Few [2-7] and Many [greater than 7])
- **Target Mobility** (Moving and Static)
- **Friendly Disposition**

## NL Standards

- **Standoff:** Distance between the supported unit and the target
- **Coverage** (Point, Area, and Terrain/Area)
- **Duration:** Time an effect must last
- **Effect:** Desired outcome for each NL task
- **Onset Time:** Time for an applicable capability to take effect after it is applied to the target
- **Reversibility:** The ability to return the target to the pre-engagement level of capability.



# Joint Integration Program (JIP) FY14 Plan

- **JIP is:**
  - The DoD NLW program to find, evaluate, and demonstrate COTS/NDI NLWs for rapid acquisition and fielding for Non-Lethal Capability Sets.
- **JIP Project Selection**
  - Competitive process to find projects that address current operational needs
  - FY15-19 JIP Efforts Funded by Un-Funded Requests
- **Fall JIP Event**
  - Harpers Ferry, WV 18-20 Nov 14
  - 18 Nov – Vendor Expo Day (0900-1600)
    - Held at Customs and Border Protection, Advanced Training Center
    - Expect 70+ vendors
    - Area Law Enforcement and National Capital Region Government agencies invited
  - 19 Nov – Advanced Planning Brief to Industry (0800-1000)
  - 19 Nov – Range Demonstration (1200-2200)
    - Opportunity for warfighters to see and fire devices
    - Anticipate time for 20-30 vendors to demo
    - Night demo of light and laser products



# Individual Non-lethal System



## Purpose

- The INS is an Army effort to develop a single solution for the dismounted warfighter, which will replace the current suite of NL munitions
- In order to satisfactorily replace the current suite of NL munitions, the INS is needed to have the capability to achieve consistent NL effects on targets at varying distances across an extended range envelope

## Background

- Army Munitions Requirement Working Group (AMRWG) recommended that the Combat Developer Community **identify one system/munition to meet the full desired range capability**
- **Takeaway: The Army needed a single solution to replace multiple munitions with one system**





# Individual Non-lethal System



The overall INS effort is composed of various efforts:

## Non Lethal Small Arms (NLSA)

- To assist the INS combat development process (Analysis of Alternatives) by assessing the current state of the industry (*co-funded by JNLWD and PM-SW*)
- Relevant industry NL weapon systems will be procured, safety tested, and then evaluated by Users in a Military Utility Assessment (MUA) to obtain User feedback on state of COTS items
- 2 vendors currently under contract (Battelle and Metal Storm), looking for additional capabilities to evaluate.

## INS Maximum Range Requirement Modeling and Simulation (M&S)

- To assist the INS combat development process (requirements generation) by defining the maximum range requirement for the weapon system
- A set of virtual operational scenarios will be developed and simulated using Battle Lab and warfighter participants to determine an appropriate maximum range requirement

## ARDEC INS S&T Initiative

- Planned FY15-18 S&T effort to develop variable-velocity technologies to meet INS requirements



# Individual Non-lethal System (INS) / Non-Lethal Small Arms (NLSA)

## Project

Provide a single solution to replace multiple munitions with one system. First phase is evaluation of current technology. Second phase is modeling and simulation to guide requirements definition. Third phase is technology development.

## Requirements

**Maximum Effective:** TBD by project M&S  
**Minimum Safe:** 5m  
**Payload:** Currently blunt impact  
**Effects:** Suppress individuals  
**Weight:** TBD by this project

## Capabilities

- Provide a consistent effect from min safe to max effective
- Replace current multiple munitions with one system
- Not overburden the warfighter

## Solicitation Details

- DOTC Contract
  - To procure various COTS systems
- Will Feed into Scoping of INS S&T Project



# Spider XM-7 Non-Lethal Launcher

## Project

Provide standoff, counter-personnel, area denial effect. System will be based on the existing Spider Launcher.

## Requirements

**Maximum Effective:** 1000m

**Minimum Safe:** 5m

**Payload:** Based on existing stingball and flashbang grenades

**Effects:** Blunt impact and light/sound

**Weight:**

## Capabilities

- Standoff capability
- Man in the loop activation
- Area denial with pre-emplaced launchers

## Solicitation Details

- Performance Spec
- No contract action yet



# Disable Point Target Project

## Project

Provide a non-lethal, un-tethered, line of sight, counter personnel capability employed to disable personnel beyond the range of thrown objects

## Requirements

**Maximum Effective:** 50m (T), 100m (O)  
**Minimum Safe:** 10m (T), 2m (O)  
**Payload:** Electronics and batter to deliver effect  
**Effects:** Human Electro-Muscular Incapacitation  
**Weight:**

## Capabilities

- Delivers a high voltage, low current wave form to incapacitate target individual
- Delivers effect for a duration long enough for friendly forces to detain the target

## Solicitation Details

- RFP Jan 14, Performance Spec



# 12 Gauge Non-Lethal Extended Range Marking Munition (XM1116)

## Project

The XM1116 will provide an increased measure of force protection during Escalation of Force (EOF) procedures by providing Soldiers with an extended range NL munition that will provide additional time to transition to lethal force if necessary.

## Requirements

**Maximum Effective:** 50m (T), 75m (O)  
**Minimum Safe:** 30m (T), 10m (O)  
**Payload:**  
**Effects:** Blunt impact and marking  
**Weight:**

## Capabilities

- Increased range window for safe use
- Marking of target for later identification

## Solicitation Details

- RFP 1QFY16



# Joint Armaments Conference



## Questions