



DoD Non-Lethal Weapons Program

Overview Brief and Information Exchange

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to
Keystone Course, National Defense University, Ft. McNair, Washington, D.C.

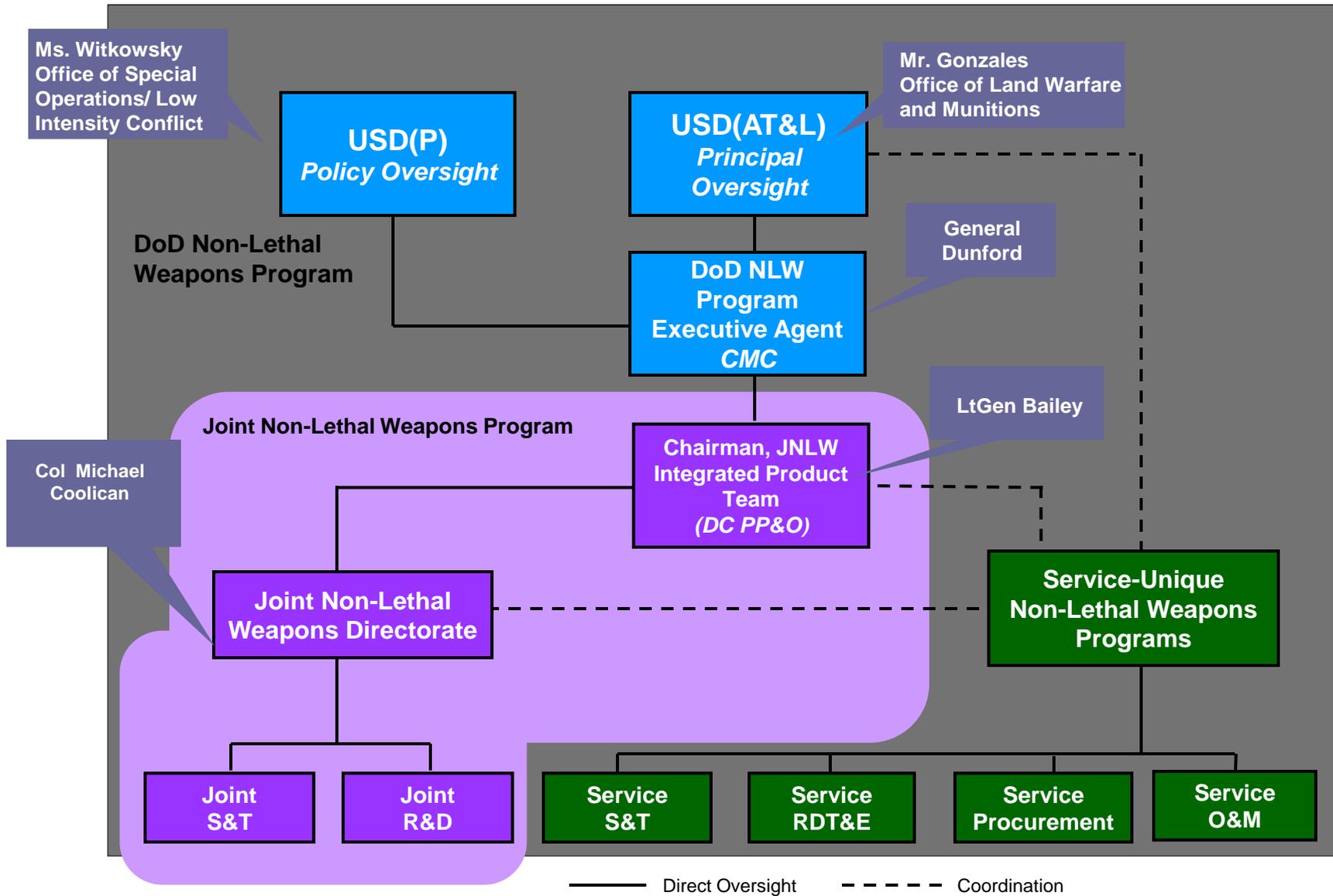
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<http://jnllwp.defense.gov>





DoD NLW Program Organization





DoD Non-Lethal Weapons Program



DoD NLW Program Established 1996

- Operation United Shield (Somalia): General Anthony C. Zinni pioneered use of NLW
- FY96 National Defense Authorization Act directed DoD to centralize responsibility for NLW



Program Highlights

- CMC designated Executive Agent
- Joint S&T / RDT&E funding
- Services responsible for NLW procurement



General Joseph F. Dunford, Jr.
Commandant of the U.S. Marine Corps



Vision

“A fully integrated non-lethal competency within each Service, to complement lethal effects, enhance the Joint Force's adaptability, and support strategic objectives that include minimizing civilian casualties”

Non-Lethal Weapons

- Provide escalation-of-force options
- Minimize civilian casualties
- Reduce collateral damage



Non-Lethal capabilities assist operating forces in minimizing civilian casualties and collateral damage



NLW Utility in Contemporary Operations 1996 to Present



United Shield – Somalia



Bosnia and Kosovo



Haiti



OIF and OEF



Reverting Back to the “New Normal”



Fielded Non-Lethal Weapons, Munitions & Devices

- Acoustic Hailing Devices
 - Procured by USA, USMC, USN, USAF, USCG
 - Discriminating hail and warn capabilities, up to 300+ m
- Optical Distraction Devices (Dazzling Lasers)
 - Procured by USA, USMC, USAF, USN, SOCOM
 - Warn/dissuade pedestrians, vehicle drivers
 - Range: 150 + meters (day); 2000+ meters (night)
- Non-Lethal Grenades
 - Procured by USA, USMC, USAF, SOCOM
- Blunt Impact Munitions
 - Procured by USA, USMC, USAF
- Modular Crowd Control Munitions
 - Procured by USA



Acoustic Hailing Devices



Optical Distractors



Flash Bang Grenades



Stingball Grenades & Launch Cups



Blunt Impact Munitions



Modular Crowd Control Munitions



Fielded Non-Lethal Weapons, Munitions & Devices (cont.)

- **40mm & 12 Ga Joint Non-Lethal Warning Munitions**

- “Flash Bang” warning shots at 100, 200 or 300 meters
- Originally procured by USN; USMC, USCG now obtaining



Joint Non-Lethal Warning Munitions

- **X26 TASER**

- Effective range 0-35 feet
- Procured by USA, USAF; Authorized for USMC procurement



X26 Taser

- **Portable Vehicle Arresting Barrier**

- Can stop a 7500lb vehicle moving at 45 mph
- Procured by USA



Portable Vehicle Arresting Barrier

- **Vehicle Lightweight Arresting Device M2 Net**

- Can stop a 5500lb vehicle moving at 30 mph
- Procured by USA, USMC



Vehicle Lightweight Arresting Device M2 Net

- **Other Non-Lethal Devices**

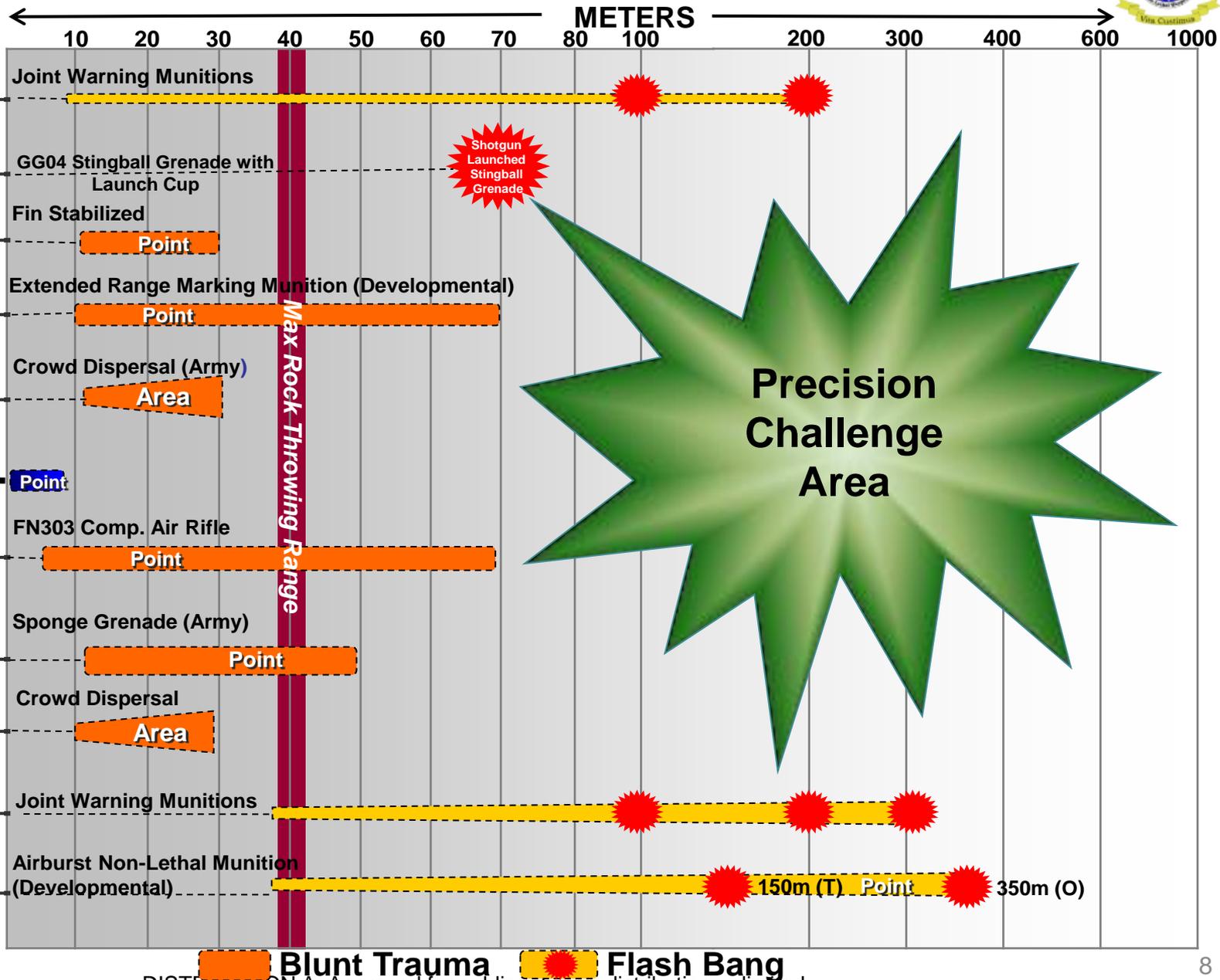
- Caltrops, Spike strips
- Pen flares, riot control agent dispensers



Pen Flares

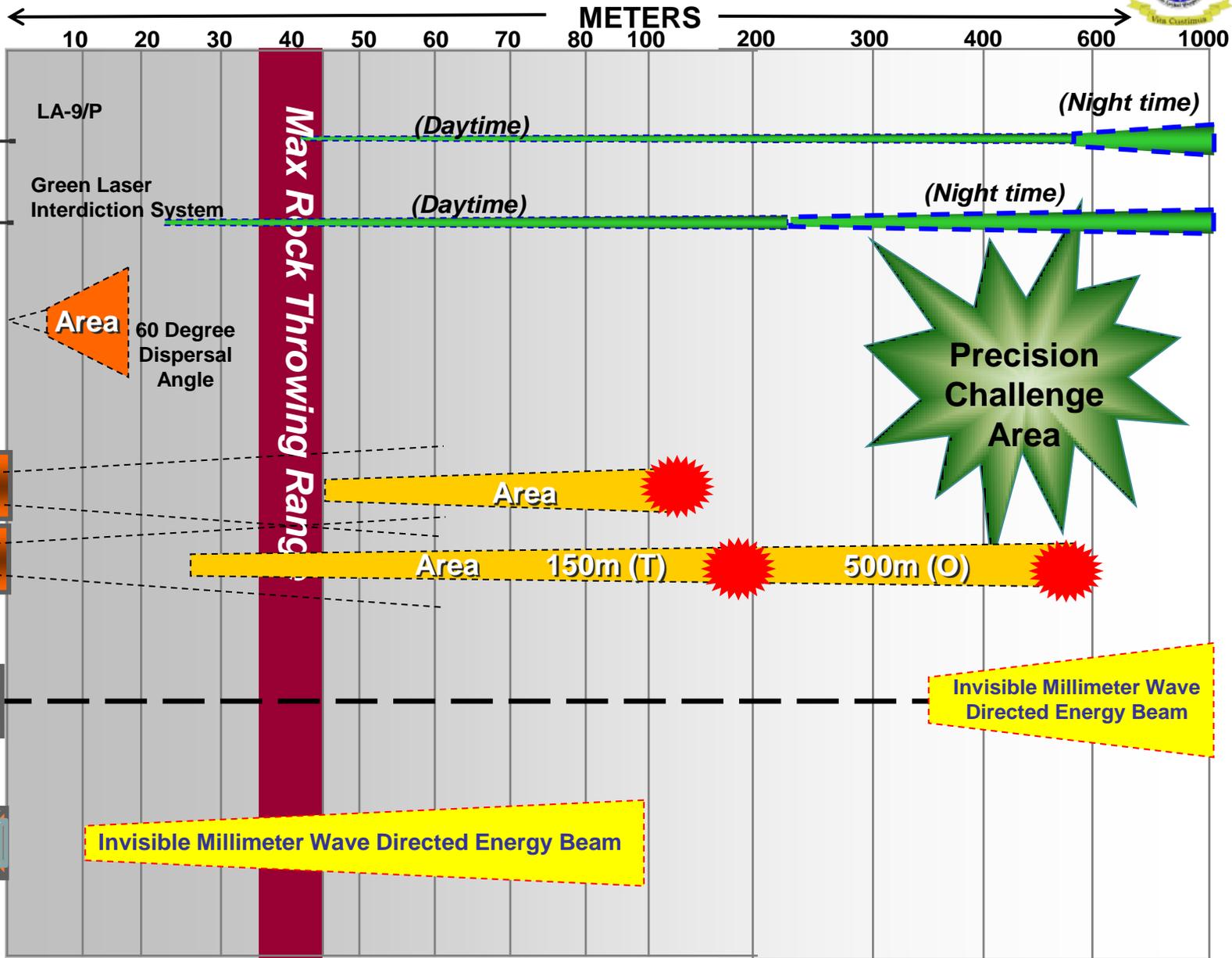


NL Weapons Range Overview





NL Weapons Range Overview



Blunt Trauma Flash Bang OI ADT



Near-Term/Quick Wins

Airburst Non-Lethal Munition



- 40 mm round for use in systems as the M203 grenade launcher
- Has a fuel enriched pyrotechnic payload, proximity airburst and selectable delay option fuse
- Designed to deny access into/out of an area to individuals, move individuals through an area and suppress individuals
- Potential to support multiple missions:
 - Force protection
 - Room Clearing/denial
 - Crowd control
 - Offensive and defensive operations



Increase Duration, Non-Kinetic



Near-Term/Quick Wins



- Commercial/Non-Developmental Item
- Fills the requirement for a non-damaging dazzling laser
- Employed during the escalation-of-force continuum to deliver a glare effect to warn and/or suppress targeted personnel from 10 meters to 500 meters

Ocular Interrupter

Improved Flash-Bang Grenade

- Greater light output and duration
- Improved environmental, health, and safety compliance
- Used as a counter-personnel tool to move/deny/suppress individuals in breaching and/or other non-lethal force operations



- Focused on a commercial solution
- Flash bang / diversionary grenade that has the capability to bang multiple times within an area to serve as a diversion / distraction

Multi-Bang Flash-Bang Grenade

Increase Duration, Non-Kinetic



Mid-Term/Big Win



Mission Payload Module

- The Mission Payload Module - Non-Lethal Weapons System is a game-changing, non-lethal counter-personnel weapon system that provides both force-application and force-protection capabilities.
- The MPM-NLWS consists of an advanced, suppressive 66 mm munition, launcher and laser sighting system with:
 - extended range (30-500 meters)
 - high volume of fire & capability to transition from non-lethal to lethal engagements within seconds
 - shoot on the move capability
 - vehicle, vessel or ground-mounted/tripod mounted tube launcher

Increase Range, Kinetic/Non-Kinetic



Active Denial Technology

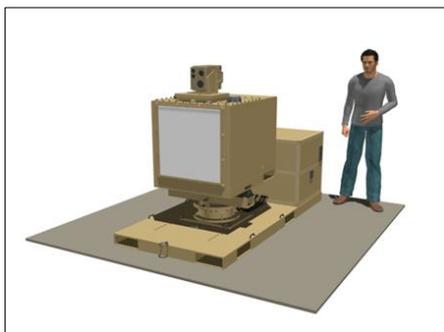


Active Denial System

- Advanced Concept Technology Demonstrator
- Proven Effects – 95 GHz effects
- Effective at long-ranges

Compact ADT

- Demonstrate the same effectiveness in an operationally suitable configuration
- Develop a compact, lightweight second harmonic Gyrotron with a room temperature electropermanet



Solid State (SS) ADT

- Develop a compact, self-contained, NL SS-ADT demonstrator
- Significant reduction in size and weight
- Cost sharing effort between Army Research and Development Center and JNLWP

DoD Directed Energy Investment



Active Denial System (ADS)



Sergeant Major of the Marine Corps, SgtMaj Barrett experiences the momentary effects of ADS



ADS 2: 1,000m range; 1.5m spot size



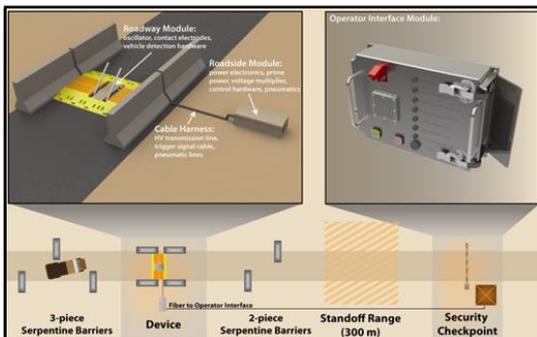
- Provides ability to repel/suppress personnel and vehicle/vessel operators up to 1,000m
- Uses “millimeter waves” not “microwaves”
- Legal, treaty and arms control compliant
- ADS was recently integrated in I MEF Exercise Valiant Mark (December 2014). Marines from 1/5, 1st Marine Division were engaged with ADS.



Demonstrators

Distributed Sound and Light Array (DSLAA)

- Acoustical and optical device
- Provides hailing and warning capabilities
- Combined effects of two integrated sensory stimulators



Pre-Emplaced Electrical Vehicle Stopper (PEVS)

- Pre-emplaced, electric, direct injection system
- Non-lethally stop vehicles at significant keep-out ranges
- Reduces risk to personnel from vehicle-born IEDs

Non-Lethal Indirect Fire Munitions (IDFM)

- Non-lethal 81 mm mortar round
- Integrated flash-bang munitions
- Suppress combatants at range with low risk of significant injury



Non-Lethal capabilities assist operating forces in minimizing civilian casualties and collateral damage



Non-Lethal Weapons Summary



- Provide operating forces with escalation-of-force options while minimizing casualties and collateral damage
- Always have lethal force overwatch/back-up
- Help fill the gap between shouting and shooting
- Offer options across the full spectrum of conflict



Non-Lethal capabilities assist operating forces in minimizing civilian casualties and collateral damage