



Non-Lethal Weapons Program



JOINT NON-LETHAL WEAPONS DIRECTORATE - Science and Technology (S&T) Investments/Needs

Present to: National Defense Industrial Association (NDIA)
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Purpose

- **Set the context of what the JNLWD does and provide a overview of the JNLWD's S&T investment plans and to highlight the JNLWP's most critical needs**
 - DoD NLW Program Origin
 - JNLWP Organizational Structure
 - Non-Lethal Weapons in use today
 - Joint Non-Lethal Effects ICDs – non-lethal counter-material and counter-personnel needs
- **Communicate with DoD stakeholders, other government agencies, industry, and academia on the JNLWP S&T path forward**
 - Inform industry and academia of our current strategic objectives to stimulate innovation and help focus IR&D
 - Drive JNLWD S&T investment
 - List specific JNLWP S&T Objectives (STOs)
 - JNLWP S&T Program – products, plans, outreach, and next steps



DoD Non-Lethal Weapons Program



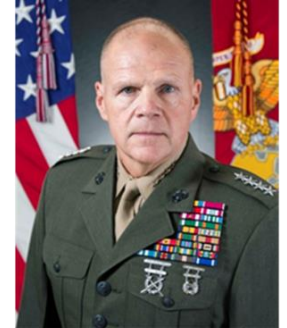
DoD NLW Program Established 1996

- 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 research and development funding
- Services responsible for NLW procurement



General Robert B. Neller
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



DoD Non-Lethal Weapons (NLW) Program



Mission Statement

“Through Executive Agent oversight and coordination, the DoD Non-Lethal Weapons Program --comprised of Joint and Service programs--will serve as the Department’s proponent to effectively identify, develop, test and evaluate, transition, field, and sustain integrated, relatively reversible and scalable effects technologies and capabilities, and develop associated policies, doctrine, concepts, and training in order to provide timely solutions to current and future requirements across the range of military operations, maximize mission effectiveness, and minimize risk to U.S. forces, coalition partners, civilians, and critical infrastructure.”



General Robert B. Neller
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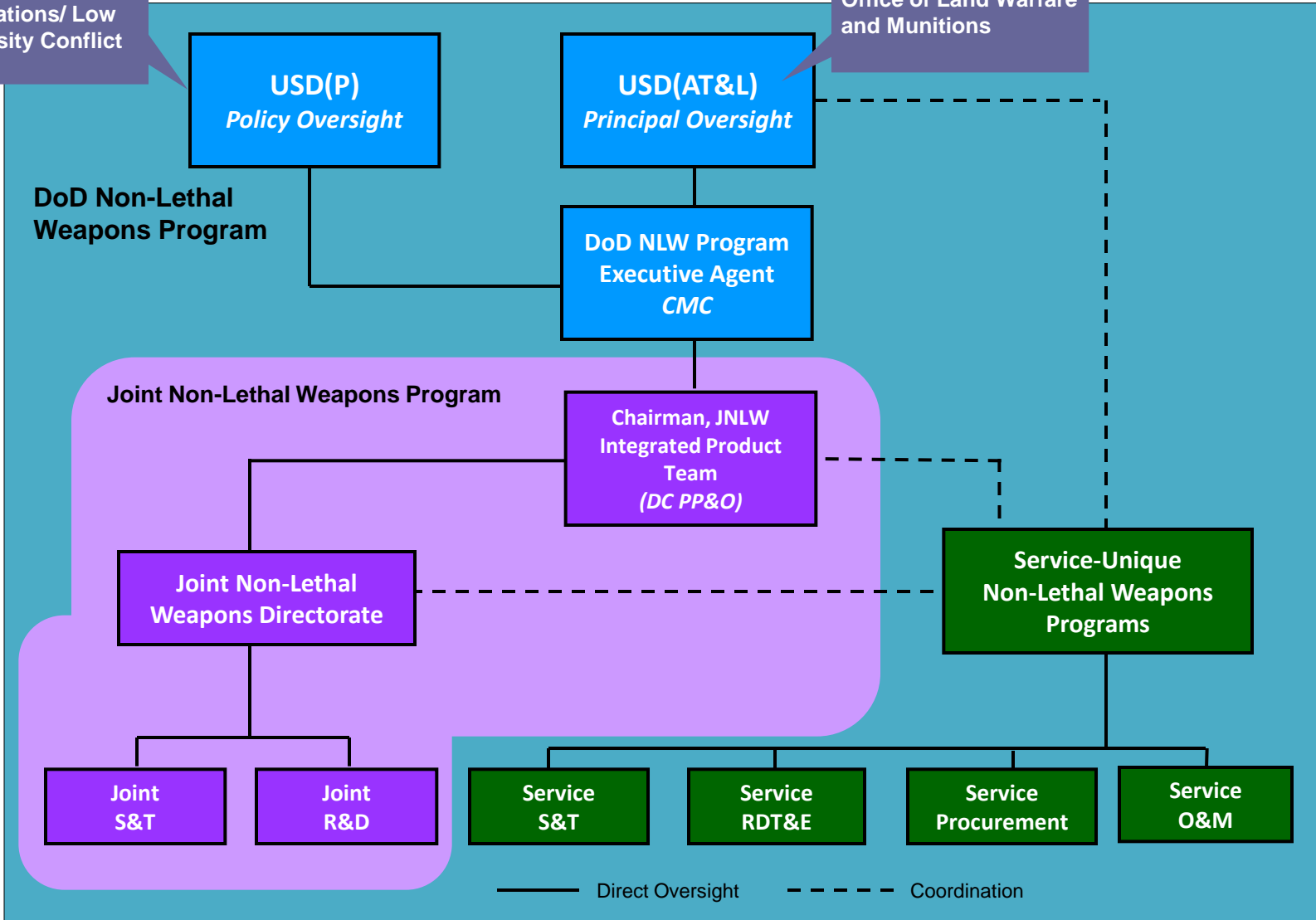




DoD NLW Program Organization

Office of Special Operations/ Low Intensity Conflict

Office of Land Warfare and Munitions



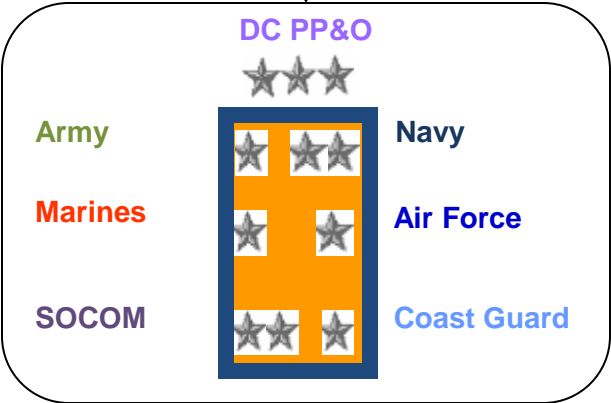


JNLWP Management Structure



**Executive Agent
Commandant, USMC**

**Joint
Integrated
Product
Team
(JIPT)**



Joint Integrated Product Team (JIPT)

- Approves JNLWP budget
- Approves resolution of program issues
- Reviews Joint & Service-unique programs

**Joint Coordination
&
Integration Group
(JCIG)**



Joint Coordination & Integration Group (JCIG)

- Recommends program priorities for development and funding
- Recommends lead-Service designations

Non-Voting Members - OSD, DOS, DOJ, DOE, DHS, Combatant Commanders and Joint Staff have representation on the IPT and JCIG



Non-Lethal Weapons in Use



12 Gauge / 40 mm Point, Area and Warning Munitions



FN303



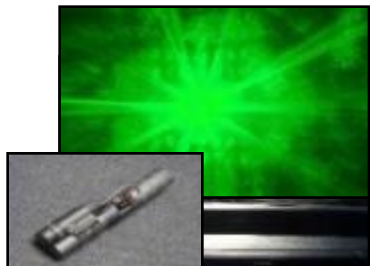
Washable Paint



Permanent Paint



Training



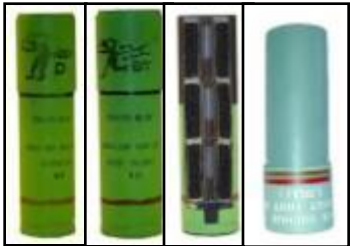
Optical Interrupters



X-26 TASER



Modular Crowd Control Munitions



66 mm Vehicle Launched NL Grenades



Flash-Bang Grenades



Portable Vehicle Arresting Barrier



Vehicle Lightweight Arresting Device M2 Net



Stingball Grenades & Launch Cups



Pen Flares



Acoustic Hailing Devices

Close-in, Kinetic/Non-Kinetic Effects



Joint Non-Lethal Effects (JNLE) Tasks

Top Ten Tasks

- 1) *Stop Vehicle (small, confined, single)*
- 2) *Stop Vehicle (medium, confined, single)*
- 3) *Stop Vehicle (large, confined, single)*
- 4) *Stop Vessel (small, confined, single, [friendly anchored])*
- 5) *Suppress Individuals (confined, single/few)*
- 6) *Suppress Individuals (open, many)*
- 7) *Stop Vessel (small, open, single, [friendly underway])*
- 8) *Deny Access into/out of an area to individuals (confined, single/few/ many)*
- 9) *Deny Access into/out of an area to individuals (open, single/few/ many)*
- 10) *Move Individuals through an area (open, many)*

JCIDS – Joint Non-Lethal Effects ICDS

- *Joint Capabilities Document signed February 2008*
- *CP & CM Initial Capability Documents signed April 2009*
- *Joint Non-Lethal Effects Tasks re-validated in 2013*

Counter-Personnel Tasks

- *Deny*
- *Move*
- *Disable*
- *Suppress*

Counter-Materiel Tasks

- *Stop Vehicle*
- *Disable Vehicle*
- *Stop Vessel*
- *Disable Vessel*
- *Stop Aircraft on Ground*
- *Disable Aircraft on Ground*
- *Divert Aircraft in Air*
- *Deny Access to Facility*

Capabilities Based Assessment Membership

J2/J3/J8	PACOM	USA	JNLWD
JFCOM	CENTCOM	USCG	OSD AT&L
EUCOM	STRATCOM	USMC	HECOE
	NORTHCOM	USN USAF	



JNLWD Science and Technology (S&T) Solutions



DOD NLW Program 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. *(Essential Elements)*

JNLWP S&T Program Intent

Foster the ideation, maturation, and demonstration of innovative and compelling NLW technologies for the Joint Force through focused investment and collaboration internal and external to the DOD R&E Enterprise



JNLWP S&T Strategic Plan



Purpose

- Communicate with DOD Stakeholders on JNLWP S&T path forward
- Inform industry of strategic objectives to stimulate innovation and help focus IR&D
- Drive JNLWP S&T investment

Outcome

- S&T objectives to serve as guideposts for NLW research and technology development
- Renewed emphasis on Directed Energy's potential to address multiple non-lethal effects capability needs



The document can be found on the JNLWP website: <http://jnlwp.defense.gov> and also at the following web-sites:

<http://www.defenseinnovationmarketplace.mil/>
<http://www.dtic.mil/dtic/>

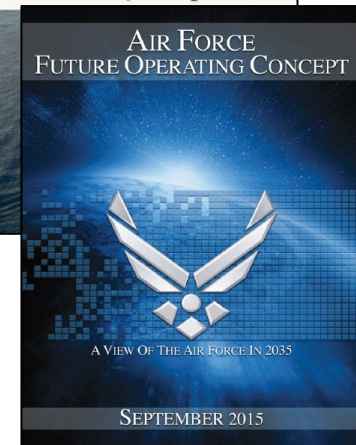
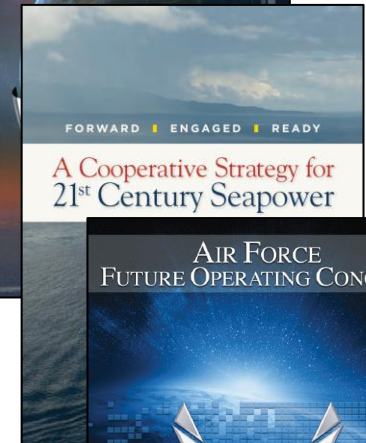
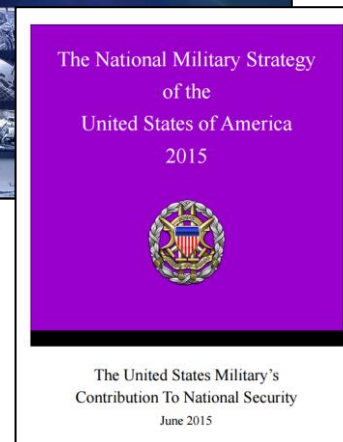


Future Warfighting Environment



Anticipated Future Trends:

- Megacities
- Engagement and Special Operations
- Emphasis on Non-Kinetic Fires
- Dispersed/ Non-linear battlefields
- Unmanned Systems



Overall, strategic and national guidance outlines a complex, interconnected world that is increasingly locked together by trade and technology while non-state actors and natural disasters continue to disturb what stability exists



JNLWP S&T Objectives (STOs)



Capability requirements and technology opportunities drive specific NLW S&T objectives. Those drivers are reflected in the dual structure of the JNLWP STOs:

STO – Capability (STO-Cs): S&T objectives that are tied to [documented requirements and/or emerging requirement demand](#) signals from the Military Services and CCMDs.

STO – Enabler (STO-Es): S&T objectives that will help [advance the development of state-of-the-art or to increase the knowledge base](#) for the most promising NLW technologies. These objectives are organized by a particular technology or family of technologies that require further [research and/or development to optimize their utility](#).

Near-, mid-, and far-term goals provide temporal context.

- Near term: one to three years (FY16-18)
- Mid-term: three to six years (FY19–21)
- Far-term: six years and beyond (FY 22+)



STO Attributes



The JNLWP will seek S&T investments with the following attributes, which will facilitate the efficient use of its resources in support of the JNLWP S&T Program's intent.

- **Applicability**
- **Scalability**
- **Modularity**
- **Space, Weight, Power Consumption, and Cooling (SWaP-C) Requirements**
- **Cost to develop**



STO- Capability (STO-C)



Counter-Materiel

- **STO-C: Counter-Materiel – Vehicles**
- **STO-C: Counter-Materiel – Small/Medium Vessels**
- **STO-C: Counter-Materiel – Unmanned Systems (UxS)**

Counter-Personnel

- **STO-C: Counter-Personnel – Move and Deny**
- **STO-C: Counter-Personnel – Suppress**
- **STO-C: Counter-Personnel – Disable**

Counter-Facility and Equipment

- **STO-C: Counter – Facility**
- **STO-C: Counter – Equipment**



STO- Enabler (STO-E)



Directed Energy

- **STO-E: High Power Radio Frequency (HPRF) Technology**
- **STO-E: mm-Wave Active Denial Technology (ADT)**

Human Effects Characterization

- **STO-E: Human Effects Characterization**

Sound and Light (S&L)

- **STO-E: S&L – Escalation-of-Force at a Distance**
- **STO-E: S&L – Flash & Bang**

Human Electro-Muscular Incapacitation (HEMI)

- **STO-E: Human Electro-Muscular Incapacitation (HEMI)**

Future Opportunities

- **STO-E: Innovation**



JNLWP S&T Product Transition



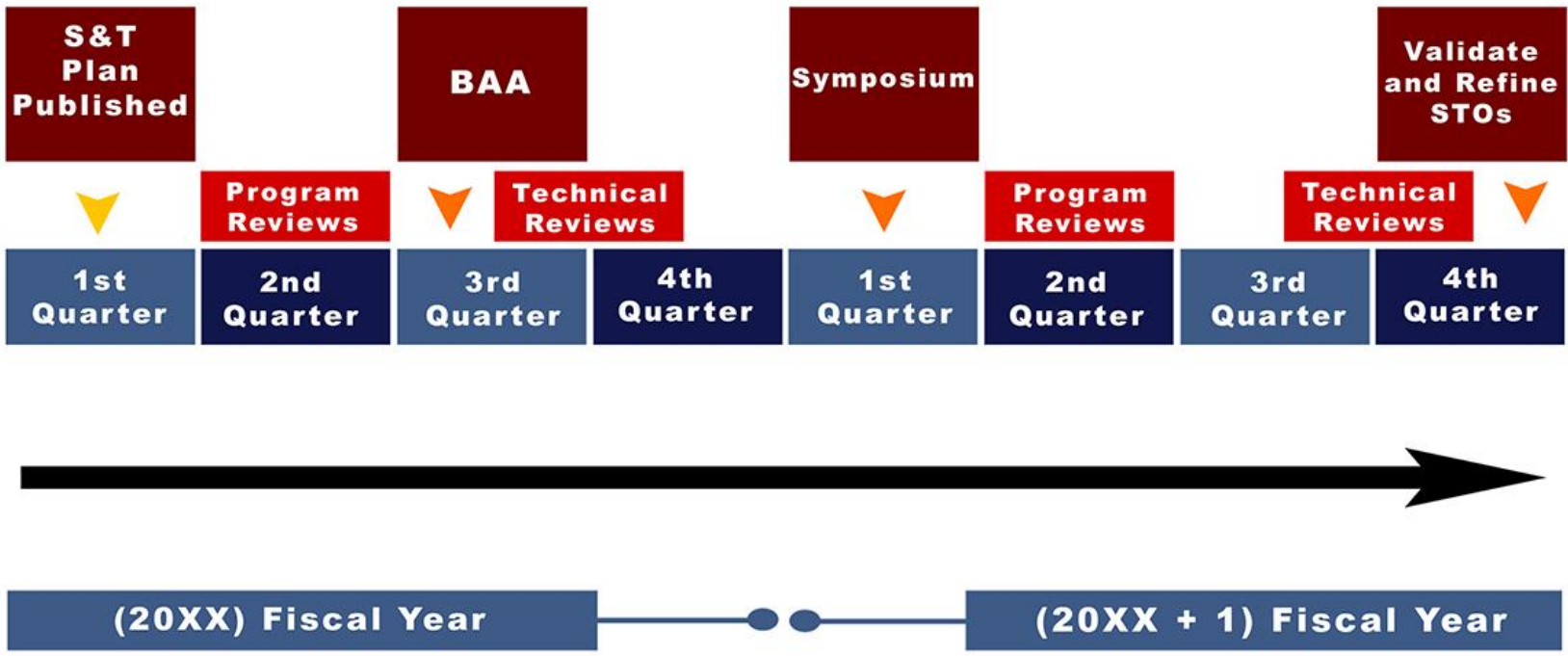
- 1) Transition to the Joint Force.
- 2) Develop into an R&D Project or Engineering Prototype.
- 3) Reduce Risk for Acquisition Initiatives.
- 4) Transition to another Government Agency or Commercial Industry.
- 5) Contribute to the State-of-Knowledge and Inform Future Investment.



JNLWP S&T Planning Cycle



FY XX PLANNING CYCLE



The two-year S&T cycle provides continuity for multi-year investments while maintaining flexibility to respond to emerging S&T needs.



Collaboration Opportunities within DOD R&E

Enterprise



- **DoD Laboratories and Engineering Centers**
- **Government-Sponsored Not-For-Profit Entities**
- **International Programs**
- **Other highlighted R&D partners:**
 - Combatting Terrorism Technology Support Office (CTTSO)
Technical Support Working Group (TSWG)
 - Physical Security Enterprise & Analysis Group
 - Rapid Reaction Technology Office
 - Defense Advanced Research Projects Agency
 - U.S. Army's Rapid Equipping Force (REF)
 - Small Businesses (through the Small Business Innovative Research Program)



JNLWP S&T Acquisition Approaches



Primary :

NLW R&D Indefinite Delivery, Indefinite Quantity Multiple Award Contract (IDIQ MAC). The anticipated benefits of the IDIQ MAC - expected to award in summer 2016 - are to:

- Provide increased flexibility for executing a wide range of R&D technical objectives
- Increase the breadth of expertise readily accessible to work non-lethal technology challenges
- Reduce project initiation timelines and schedule risk

Others:

- JNLWP Broad Agency Announcement
- Small Business Innovative Research (SBIR) program
- Defense Ordnance Technology Consortium (DOTC)



JNLWD S&T Program - Next Steps



- Development and execution of JNLWP S&T Implementation Plan, a detailed plan describing specific JNLWP investments and how they tie to the STOs
- Maturation of JNLWP S&T process procedures
- Identification of expanded collaboration opportunities to leverage Directed Energy focus within DOD R&E Enterprise
- Verification and validation of STOs and research/technology approach in coordination with Service stakeholders (next S&T Strategic Plan update – 1QFY18)