Non-Lethal Weapons Program

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

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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

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

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

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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

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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 | | |
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/

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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.

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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

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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.

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

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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)