

DoD Non-Lethal Weapons Program Brief

2019 NDIA Armaments System Forum

4 Jun 2019



Col W.B. Leimbach, Jr.
Director, Joint Non-Lethal Weapons Directorate (JNLWD)

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Agenda



- DoD NLW Executive Agent
- Small Arms Investments
- Unconventional & Emerging Armaments Investments



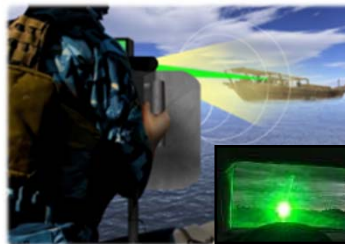
Bottom Line Up Front (BLUF)



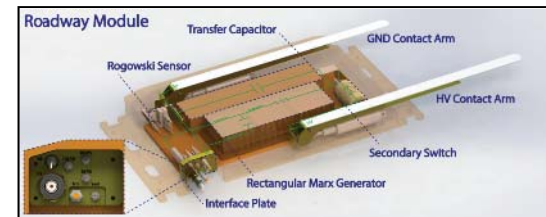
- The world’s most lethal, credible, and influential Joint Force must remain capable of deterring and defeating the full range of threats to the United States and her allies
- The DoD NLW Program provides Department-wide, Interagency and International leadership for the advancement of non-lethal weapons (NLW).



Counter Personnel Munitions & Counter Material (Blunt Impact /RCAs)



Sound and Light Munitions, Devices, and Weapons



Conducted Energy Weapons



Directed Energy Weapons




Human Effects Characterization



DoD Directive 3000.03E; DoD Executive Agent (EA) for NLW, and NLW Policy




Department of Defense
DIRECTIVE

NUMBER 3000.03E
April 25, 2013
Incorporating Change 2, August 31, 2018

USD(A&S)

SUBJECT: DoD Executive Agent for Non-Lethal Weapons (NLW), and NLW Policy
References: See Enclosure 1

1. **PURPOSE** This directive:

- Reissues DoD Directive (DoDD) 3000.3 (Reference (a)) to update the authority, established policy, and assigned responsibilities for the management of the DoD NLW program.
- Continues the designation of the Commandant of the Marine Corps (CMC) as the DoD Executive Agent (EA) for NLW in accordance with DoDD 5101.1 (Reference (b)).

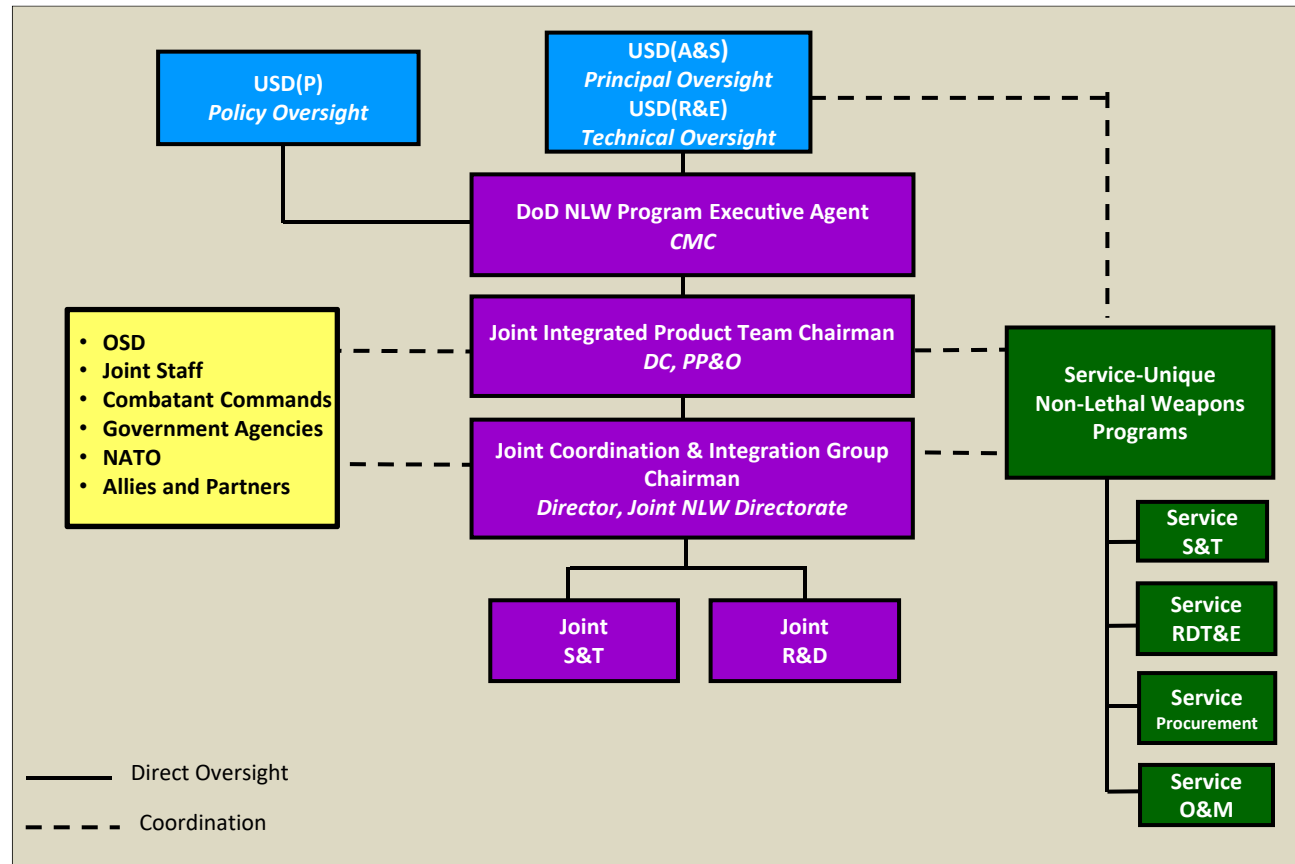
2. **APPLICABILITY** This directive:

- Applies to:
 - OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense (IG DoD), the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this directive as the "DoD Components").
 - All NLW science and technology, development, test and evaluation, assessment of military utility, acquisition programs, operations and sustainment, and the employment of fielded NLW.
 - NLW that are explicitly designed and primarily employed to incapacitate personnel or materiel immediately, while minimizing fatalities, permanent injury to personnel, and undesired damage to property, facilities, materiel, and the environment.
- Does not apply to:

- DEPSECDEF Signature
- **Specifies CMC's EA responsibilities, e.g.:**
 - Serving as **DoD focal point** on all NLW matters
 - **Stimulating and coordinating NLW requirements** across DOTMLPF
 - Managing **separate USMC program elements** for **Joint NLW S&T and R&D**
 - Providing technical **oversight** of **Joint NLW** and maintaining **insight** into **Service funded NLW**
 - **Recommending DoD-wide NLW policy, planning and programming guidance**
 - Promoting NLW cooperation and **coordination** with other U.S. **government agencies and allies**



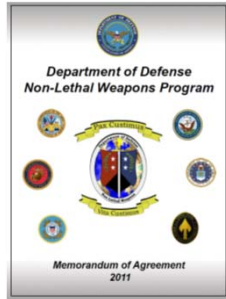
DoD Non-Lethal Weapons Program Organization Construct



- Service coordination is governed by a **Joint Service Memorandum of Agreement** under OPSDEPS signature



Joint Service Memorandum of Agreement



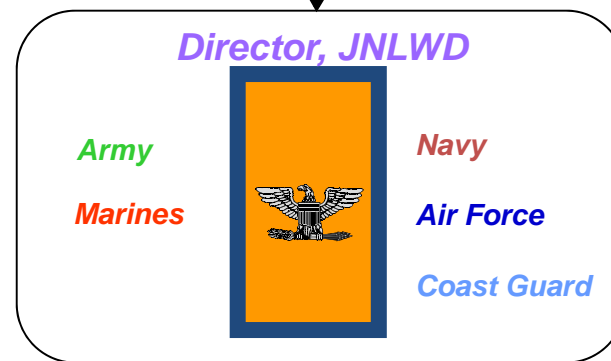
DoD NLW Program Executive Agent
CMC

Joint Integrated Product Team
Chairman
DC, PP&O



Joint Integrated Product Team (JIPT)

- Meets semi-annually
- Approves JNLWP budget
- Approves resolution of program issues
- Reviews Joint and Service-unique programs



Joint Coordination & Integration Group (JCIG)

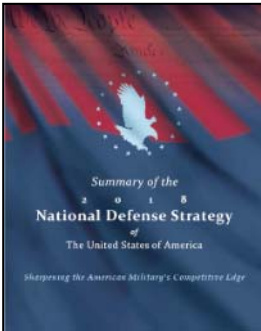
- Recommends program priorities for development and funding

Non-Voting Members:
OSD, Joint Staff, Combatant Commanders and Other Government Agencies



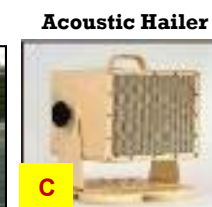
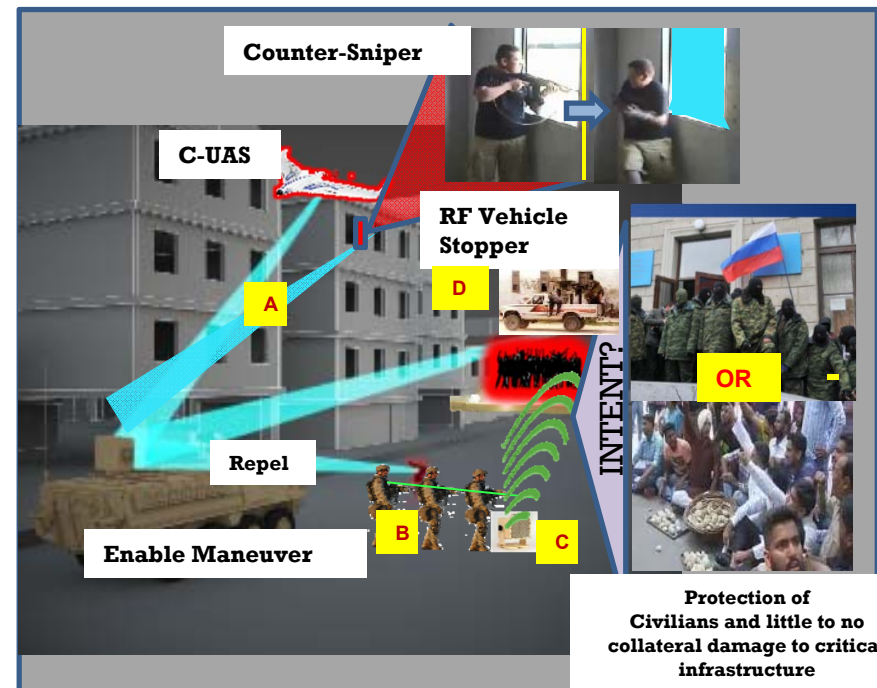
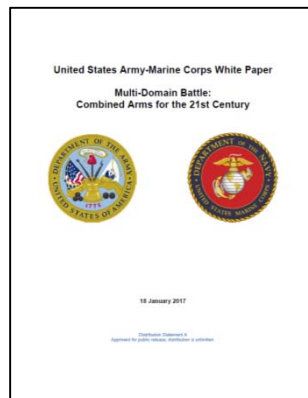
Non-Lethal Weapons:

Provide relevance beyond Force Protection & Police Applications



“We must use creative approaches, make sustained investment, and be disciplined in execution to field a Joint Force for our time, one that can compete, deter, and win in this increasingly complex security environment” – 2018 National Defense Strategy

"Fire and maneuver forces coordinate, plan, and execute fire support tasks to defend the force from attack and surveillance, and **create exploitable lethal and nonlethal effects in support of a scheme of maneuver**"



and flash-bang munitions



DOD NLW Program

Working Mission & Vision Statements



Mission

The DoD Non-Lethal Weapons Program develops and fields intermediate force capabilities between presence and lethal effects in support of national interests.



Vision

Transform the National Security Enterprise by mainstreaming the planning and employment of intermediate force capabilities to save lives and reduce collateral damage.



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Joint Non-Lethal Weapons Program Small Arms Investments



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Current / Near Term Capabilities



Ocular Interrupter (USMC)
IOC – Jan 18



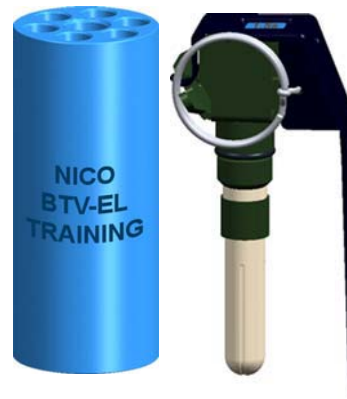
12 Gauge Extended Range NL Point Round (USA)
Full Material Release 4QFY20



6 Bang Flash Bang Grenade (SOCOM)
Began Fielding 3QFY18



81mm Flash Bang Munition (USMC)
Procurement begins in FY21



Lead Free Single Bang Training Grenade (SOCOM)
Fielding & Deployment Release in 3QFY20



9 Bang Flash Bang Grenade (SOCOM)
Fielding & Deployment Release 2QFY22



Caseless Telescoping NL System (CTNLS)



DESCRIPTION:

- Current nonlethal munitions require soldiers to utilize different platforms and munitions to engage personnel from 5 meters out to 50 meters which burdens the logistics system as well as the decision process of the soldier when engaging targets

FISCAL YEAR OBJECTIVES:

- Advanced Technology Demonstration (ATD)
- To conduct evaluation of advanced prototype system to determine if it is a suitable nonlethal counter-personnel engagement capability against targeted individuals, delivering equivalent on-target effects from a minimum engagement range of five (5) meters to 100 meters

UNIT COST/ACQUISITION OBJECTIVES:

- Conduct Joint Combined Arms Maneuver
- Set Theater Sustain Operations & Maintain Freedom of Movement
- Information obtained from the experiment will be used to refine and support the KPPs, KSAs, Attributes and Rationale of the INS CDD

REQUIREMENTS FOUNDATION (If Applicable):

- Initial Capabilities Document (ICD) for Counter-Personnel Joint Non-lethal Effects (CP JNLE), CARDS # 06094, 23 Dec 13

PERFORMERS:

- Combat Developer: ANSEC, MSBL, TCM-Maneuver Support, FLW, MO (MO-4th)
- Material Developer: CCDC-AC, Picatinny, NJ (NJ-11th)

Resourced by JNLWP in FY19

Technology Readiness Level (TRL): 5



EoF CROWS for Integrated Base Defense



OBJECTIVE:

- CROWS Optimization for EoF Technologies (Power, Comms, Slewing)
- Engineering Design & Integration
- Safety Release
- S&T development of Next Generation EoF CROWS System - Optimized EoF Technologies (i.e AHD, Laser Dazzler & LED Bright White Light)

MILITARY RELEVANCE/OPERATIONAL IMPACT:

- Requirements Foundation/Demand Signal
 - Army Watercraft Systems indicates EOF as Threshold requirement in MSV(L) CDD and in 4 ONS for LSV and LCU vessels.
 - USA MFPRS CDD has CROWS EOF as threshold requirement.

TECHNICAL APPROACH:

- Build upon the Escalation of Force (EoF) Common Remotely Operated Weapons Station (CROWS) NLW Integration of the LRAD 500X AHD, BE Meyers Glare Recoil Laser Dazzler and Wise LED Bright White Light onto a CROWS Tech Refresh System (Baseline System)
- US Government owns the Data Rights to CROWS
- Army PEO Soldier named the MDA for Army Mobile Force Protection Response System (MFPRS)
- USAF Integrated Base Defense Security System (IBDSS)
- Develop, Store, Ship & Operate JNLWP ED&A Demonstrator for Vehicle, Vessel, Container or Ground Mount Configurations.

PERFORMERS:

- PM Soldier Weapons, Picatinny, NJ – Material Developer
- CCDC AC, Picatinny, NJ – Engineering Design
- Army Watercraft Systems, Fort Lee, VA – Combat Developer
- ATEC, Aberdeen Proving Grounds, MD – Safety Release
- Non-lethal Scalable Effects Weapons Vendors (TBD)

SCHEDULE & COST:

Resourced by JNLWP in FY21-22

Current TRL: 4

TRANSITION PATH / SPONSOR: Sustainability Center of Excellence (SCOE), DoE and JNLWP Experimentation, Demonstration & Assessment Program



DoD NLW Program Summit 3QFY20 – 2QFY21



- JNLWD / Services in Active Planning Phase Now
- Event will consist of:
 - Private Range Vendor Demonstrations (Government Selected Technologies)
 - Vendor Symposium (All U.S. Based NLW Manufacturers)
 - DoD NLW Advanced Planning Brief to Industry
 - Government Only / NATO Meetings
- JNLWD Project Officer, Stephen Peace, (703)432-0904, stephen.j.peace@usmc.mil





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Joint Non-Lethal Weapons Program Unconventional & Emerging Armament Investments



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JNLWP Science & Technology Strategic Plan



Initial JNLWP S&T plan published in April 2016

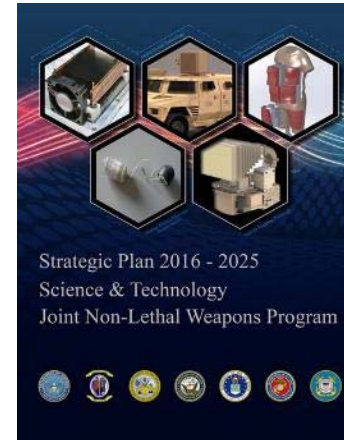
- 2020-2025 S&T Strategic Plan update being published
- Next JNLWP BAA FY21

Purpose

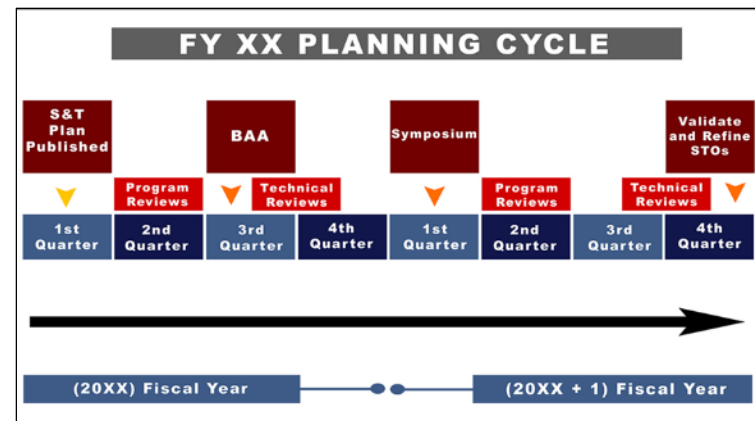
- Communicate S&T Portfolio's Intent
- Pronounce an S&T Investment Strategy
- Articulate S&T Project Management Guidelines
- Define series of S&T Objectives (STOs)

~12 NLW STOs inform priorities with respect to:

- Future operating concepts & Joint warfighter priorities
- DoD & Service Strategic Documents (e.g. NDS)
- JROC-approved "JNLE Capability Gaps" ICDs
- COCOM IPLs & STIPLs
- NLW Technology state of the art, and NLW/HE research knowledge-base

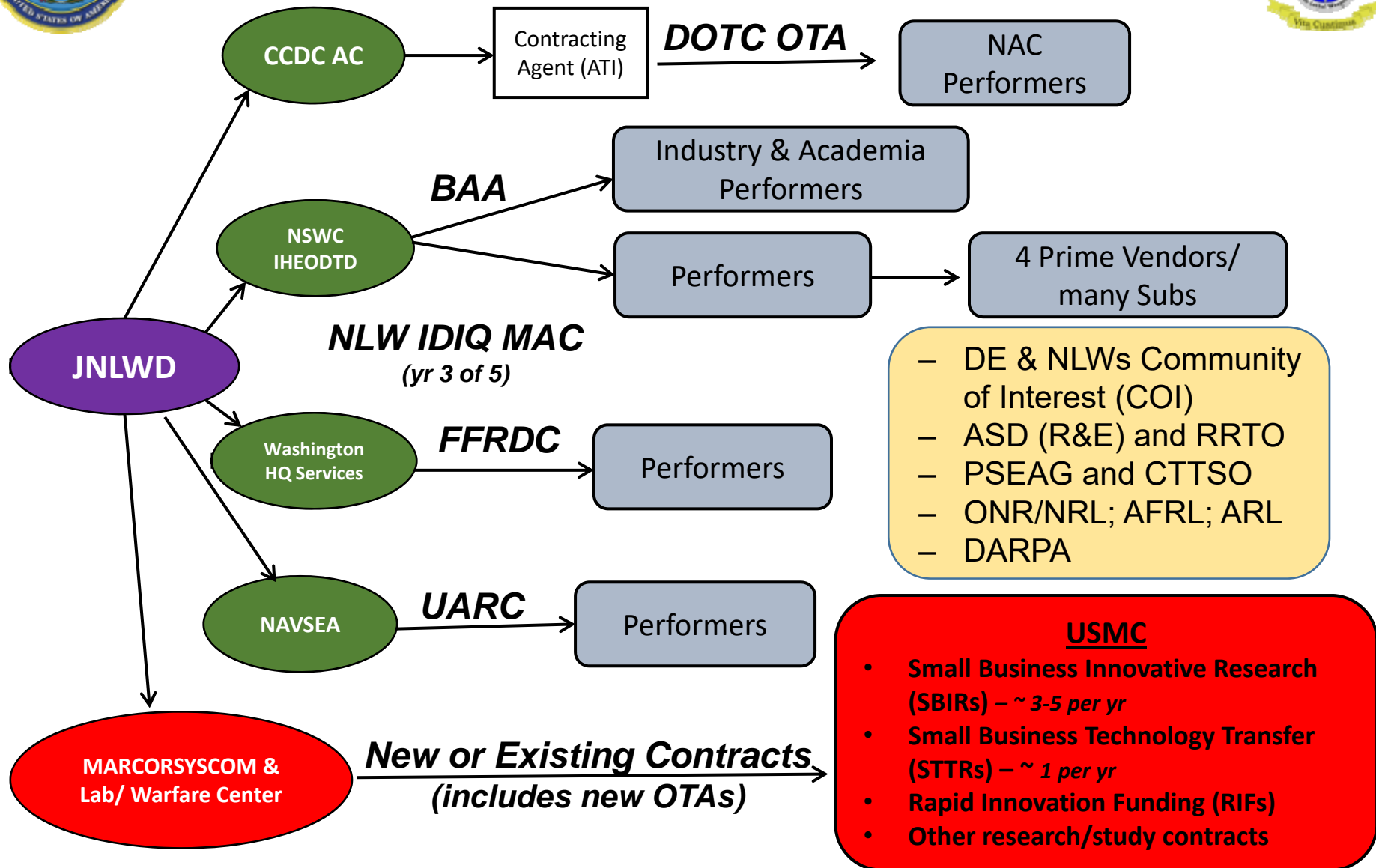


INVESTMENT AREAS	WEIGHT
Counter-Personnel (CP)	30-45%
Counter-Materiel (CM)	30-45%
Enabling Technologies	5-20%
Innovative Technologies	Up to 20%





DoD NLW Contracting Vehicles





JNLWP Technology Investments



Next-Generation

Spiral Development

Prototyping & Technology Demonstrations

Warning Munitions

Unambiguous Warning & Blunt Impact Incapacitation

- Flashbang effects
- Blunt Impact, Marking, & Obscuration effects

Suppression Devices

Deny Access

- Flash blind effects
- Debilitating sound & over pressure effects

Sound & Light

- Distributed Sound & Light Arrays
- Laser Induced Plasma Effects

Long Range Warn & Incapacitation

- Flashbang effects
- Dazzlers & Lights
- Thermal Discomfort
- Delivery of Voice Commands

Active Denial Technologies (ADT)

Repel Individuals

- Legacy ADT Systems
- Solid-State ADT Skid-Plate
- SWAP-C² Improvements

Pre-Emplaced Electric Vehicle Stopper (PEVS)

Vehicle Stopping

- USAF Pilot Program
- SWAP-C² Improvements

Innovation & Preliminary Designs

Feasibility Studies & Experimentation

Vessel Stopping

- Occlusion
- Radio Frequency – High Power Microwave (RF-HPM) Vessel Stopping

Vehicle Stopping

- RF-HPM Vehicle Stopping
- Vehicle Stopping Modular Multi-Mission Prototyping
- SWAP-C² Improvements

Human Electro-Muscular Incapacitation (HEMI)

Disable Individuals

- Wireless HEMI Munition
- Conventional firearm employed
- Point & Area targets
- Long Range & Long Duration Incapacitation

Counter UAS

C-UAS

Innovative Application of NL Technologies
Collaboration w/ MCWL (Dazzlers; HPM / ADT)

Integrated Base Defense

Move / Suppress / Deny System-of-Systems

- Sound & Light
- Active Denial Technologies
- RF-HPM Veh. / Ves. Stopping
- Other Kinetic NLWs & Munitions
- FSEP 2.0 / UxS Integration



JNLWP S&T Program Summary



- **Knowledge Discovery:**
 - Build upon latest scientific and technical developments to enable the fielding and mainstreaming NLWs for intermediate force applications.
- **Fail Faster, But Thoughtfully:**
 - Minimize failures and maximize success by executing early and frequent incremental milestones and potential off-ramps for projects.
 - Involve customers and leadership early and often in the project life-cycle to maximize warfighter support, and minimize re-design.
- **Collaboration:**
 - Invite a wide community of experts to contribute as part of “cross-functional” learning teams by -
 - Continued joint coordination and collaboration with DoD and other government agency S&T organizations
 - Expanding performer base via rigorous market surveys
 - Utilizing more efficient and diverse contracting mechanisms
- **Reduce Risks:**
 - Provide early and frequent opportunities for customer and leadership risk assessments and feedback for project milestones.
 - Implement risk mitigation strategies as applicable to minimize failures and maximize ultimate success.
- **Transition:**
 - Identify methods, industries, or technologies to deliver transition-ready NLWs to the National Security Enterprise for incorporation into fieldable systems for the warfighters.
- **Inform Industry:**
 - Seek industry partnerships in Joint S&T research aimed at delivering transition-ready technologies and risk-reduction products to the Joint force.



Summary



- NLW provide operating forces with intermediate force capabilities between presence and lethal effects while minimizing casualties and collateral damage
- The DoD NLW Program provides Department-wide, Interagency and International leadership for the advancement of NLW

