



United States Marine Corps Escalation of Force/Non-Lethal Weapons Capability Presentation

Prepared for the Joint Integration Program

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United States Marine Corps



Purpose

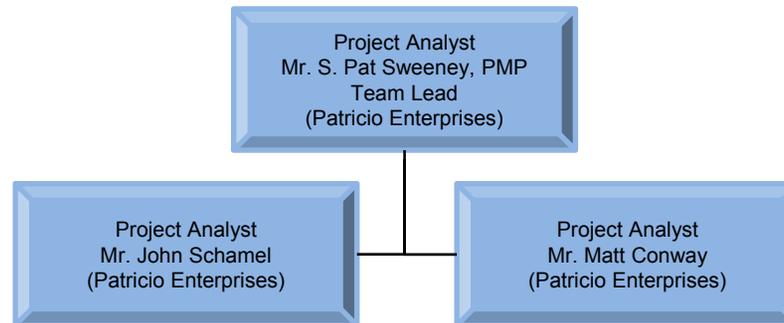
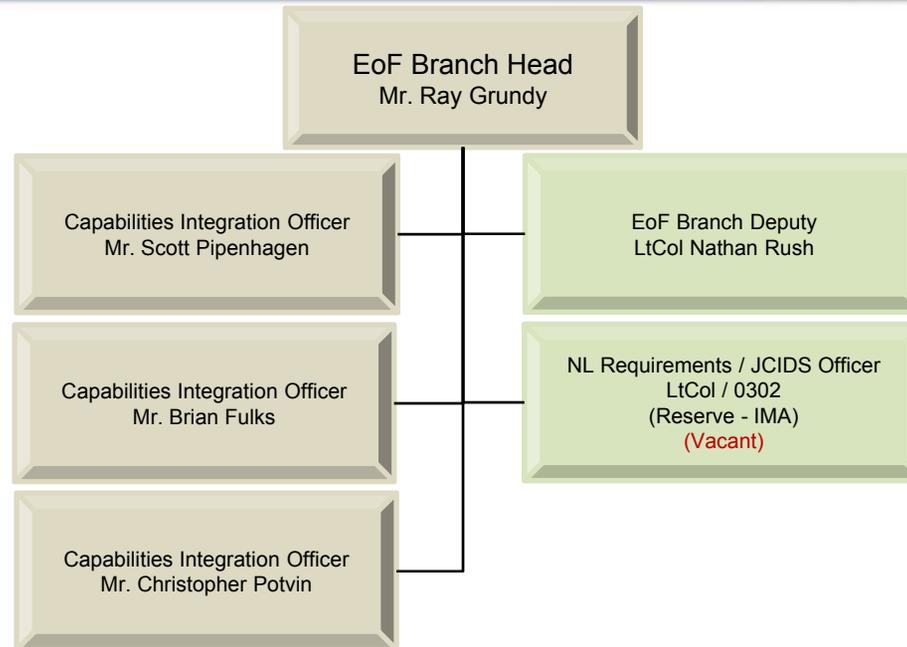


To provide industry with:

- An overview of the USMC technology challenges identified during multiple capability analyses
- Highlights of on-going efforts to address identified challenge areas



Organizational Structure Escalation of Force Branch





USMC Escalation of Force / Non-Lethal Weapons Vision and Mission



- **Vision**
 - A U.S. Marine Corps trained and equipped to seamlessly integrate escalation of force capabilities in IW, COIN, Peace Keeping, Stability and HA/DR operations and those operations in which casualties and collateral damage must be limited.
- **Mission**
 - Providing the Marine Corps with the capacity and capability of integrated EoF systems that supplement lethal systems and allow for increased options for force application that meet the dynamics of future operations across the spectrum of conflict, while limiting collateral damage and lethal effects.
- **Traceability**
 - Derived from the USMC 2006 NLW & Capabilities Strategic Integration Plan, CMC's V&S 2025 and Task # 17, Implementation Planning Guidance, ICDs for Joint NL effects (CM & CP), ICD for EoF Capabilities, and the POM-14 SPD
 - Supports CMC's V&S 2025 and EUCOM, SOCOM, NORTHCOM, and CENTCOM IPLs



USMC CHALLENGES

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Escalation of Force - NonLethal Effects (EoF-NLE)
High-Level Operational Concept Graphic (OV-1)

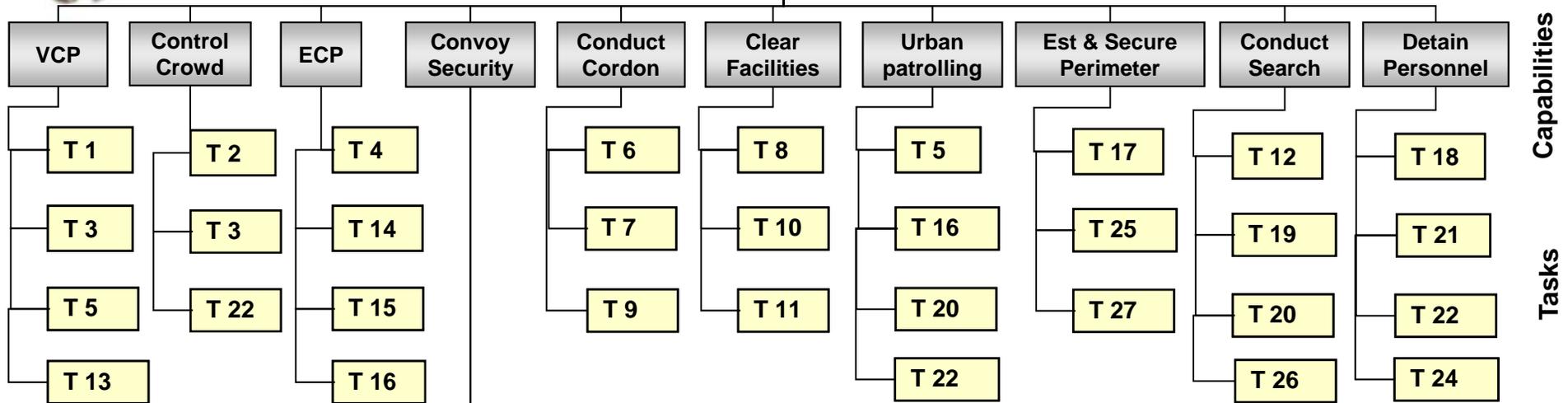




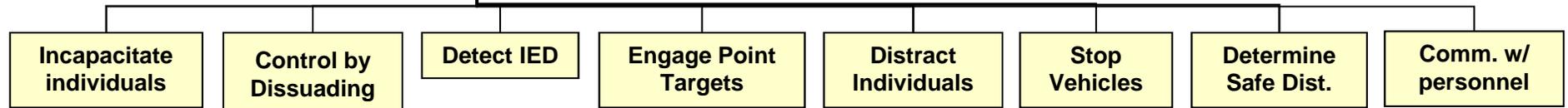
Solution - 10 Capabilities / 27 Tasks



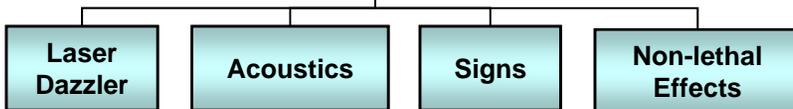
Escalation of Force (EoF)



Exploded view of Convoy Security tasks



Potential Solutions



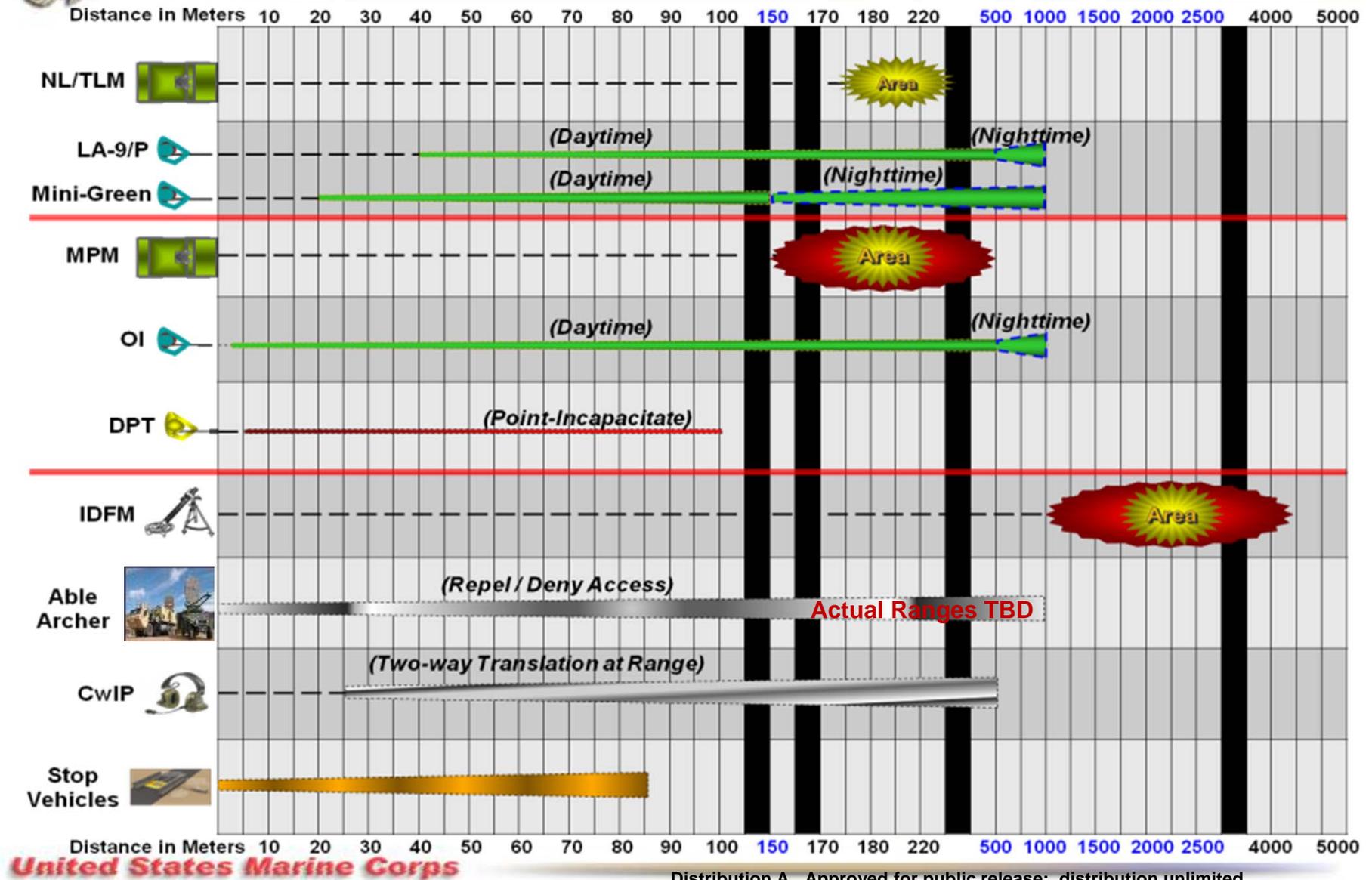
- T1 Control personnel w/ physical means
- T2 Incapacitate Personnel
- T3 Control personnel by dissuading
- T4 Control human traffic in & out of closed areas
- T5 Detect booby traps, IEDs, UXO
- T6 Engage point targets with non lethal effects
- T7 Engage area targets with non lethal effects
- T8 Create entrance
- T9 Distract/disorient individuals
- T10 Force occupants out of a space w/o entering
- T11 Seal spaces and facilities
- T12 Sense inside space w/o entering
- T13 Stop vehicles
- T14 Inspect vehicles
- T15 Inspect personnel
- T16 Warn vehicles & personnel at safe distance
- T17 Impede vehicular movement
- T18 Provide emergency or standalone power
- T19 Determine safe distances from explosive threats
- T20 Secure detained personnel
- T21 Detect & Identify Personnel/Vehicles in vicinity of perimeter
- T22 **Communicate w/ indigenous personnel**
- T23 **Register positively** identified individual
- T24 Identify & detect personnel/vehicle at long range
- T25 Provide area denial
- T26 Clear space
- T27 Stop vessels



USMC PROGRAMS



USMC Programs Overview





Disable Point Target (DPT)



Program Overview

- **Multiple Need Statements:**
 - Untethered Non-Lethal Weapon Capability
 - Electro Muscular Disruption
- **Multiple ICDs:**
 - Incapacitate Targeted Individuals
 - Engage Point Targets with non-lethal effects
- **Currently Limitations:**
 - Current individual personnel incapacitation tethered systems require Marines to be in close proximity to the threat (approximately 21 feet) and limits freedom of movement following engagement
- **Analysis of Alternatives (AoA):**
 - Determined Electro-Muscular Incapacitation (EMI) as the preferred technology

Key Requirements

- Disable – Affect target functionality immediately upon engagement, rendering the individual incapable of voluntary major muscle movement
- Duration of Effect – (T) 30 seconds; (O) 60 seconds
- Effective Range – (T) 10-50 meters; (O) 2-100 meters
- Munition untethered from launching platform
- Weight of Munition – (T) ≤150 grams (each); (O) ≤75 grams (each)

Impacts:

- A non-lethal, untethered, extended range, multi engagement, precision point target, disabling effect in Escalation of Force situations.
- Deployable from a safe standoff distance and capable of rapidly re-engaging the target or engaging multiple targets sequentially.
- Uniquely suited for employment ISO urban patrolling, crowd control, entry control point, perimeter security, clearing facilities and crisis response operations.
- Enhances EoF capabilities by expanding non-lethal options available to the warfighter.





Able Archer



Program Overview:

- USMC/Joint capability need to Deny and move individuals into/out of an area while minimizing civilian casualties and limiting collateral damage.
- 2012 Universal Need Statement for a long-range, non-lethal capability to provide a repel effect to targeted personnel.
- Initiative currently in the Materiel Solutions Analysis (MS A) Phase.
- Preliminary Analysis of Alternatives determined a version of millimeter wave technology as the preferred technology.

FISCAL YEAR 15 OBJECTIVES:

- Conduct Requirements IPT – Complete
- Complete Engineering Trade Study/Alternative Systems Review
- Complete Life Cycle Cost Estimate
- Complete Cost Analysis Requirements Description
- Receive Analysis of Alternatives approval
- Develop Draft Capabilities Development Documentation

Impacts:

- Radio frequency millimeter waves, traveling at the speed of light, deliver directed energy to personnel targets which penetrates the skin to a depth of only about 1/64th of an inch, or the equivalent of three sheets of paper. The beam produces an intolerable heating sensation, compelling the targeted individual to instinctively move. The sensation immediately ceases when the individual moves out of the beam or when the operator disengages the target. There is minimal risk of injury due to the shallow energy penetration into the skin at this short wavelength and normal human instinctive reactions.
- Non-lethal directed energy using millimeter wave technology has the potential to provide a non-lethal effect at distances up to and beyond small arms range, providing U.S. military forces with additional time and space to assess the intent of potential threats.





Clear Facilities (C-Fac) Project



Program Overview:

- Clear-A-Space Distract/Disorient (CAS D/D) Operational Mode Summary/Mission Profile (OMS/MP), 12 Jan 2004
- Initial Capabilities Document (ICD) for Escalation of Force (EoF) Capabilities
- ICD for Counter Personnel (CP) Joint Non-Lethal Effects, (JNLE)

FISCAL YEAR 15 OBJECTIVES:

- Capabilities Based Assessment (CBA): Complete
- Update CONOPS: On-going
- Develop ICD: On-going



Impacts:

- Pre-Materiel Solutions Analysis (MSA) Phase Activities to address the USMC / Joint capability gaps to Clear Facilities by Non-Lethal Means
- CBA: Forum for warfighters and technical experts to define, update, clarify and/or capture information critical to the development of Joint Capabilities Integration and Development System (JCIDS) documents to ensure the timely delivery of needed capabilities to the warfighter.
- Took a holistic look at clearing facilities in order to identify gaps and/or deficiencies across the DOTMLPF pillars.
- Development of capabilities, conditions, tasks, and standards associated with clearing and controlling facilities will be used to the develop an ICD which will serve as the foundational document from which any identified gaps can be addressed.

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QUESTIONS?

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