

# The Marine Expeditionary Rifle Squad Initiative – NDIA Overview Brief



May 2005



## MERS Goal

**Man, train, organize, provide current doctrine, lead and equip the Marine Infantry Rifle Squad in an integrated, holistic and systematic fashion that increases the overall fighting ability of the entire unit across the spectrum of its missions**



# The Integration Challenge

## Infantry Weapons

- Modular Weapon System (MWS)

## Power Systems

- Ultralife Batteries

## Operation Center

- Portable Display Device
- Digital Automated Communication Terminal (DACT)
- Handheld Personnel Locator
- Small Unit Operations/Situational Awareness System (SUO/SAS)

## Optics

- RCO/ACOG
- PVS-7 NVG
- PVS-17 Mini Night Vision Sight
- PVS-14 Individual Image Intensifier Night Vision
- PAS-13 Thermal Weapon Sight (TWS)

## Training Systems

- Indoor Simulated Marksmanship Trainer - Enhanced (ISMT-E)

## LAV, EFV, MV-22

- Mobility

## Infantry Combat Equipment

- All-Terrain All-Purpose Cart (ATAC)
- Modular Lightweight Load-Carrying Equipment (MOLLE)
- Interceptor Body Armor
- Raptor
- Wolf Pack

## NBCS

- NBC Equipment

## Ground C2

- PRR
- Handheld GPS Devices
- Precise Lightweight Global Positioning System Receiver (PLGR)
- Dead Reckoning Module (DRM)
- Single Channel Ground and Airborne Radio System (SINCGARS)



**Multiple systems, many voices**

- Human factors?
- Integration?





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# MERS Initiative

- Main Focus – Infantryman
  - Key items that provide largest increase in capability
  - Integration, human factors, reduced weight
- Key Players - PP&O, EFDC, Concepts & MCSC
- Strategic Plan
  - Integration of future weapons & equipment
  - Helps guide all key players
- Integrated Program Management
- A Change in Culture - requires integration of future systems
- Coordinated POM – compete better as a whole system
- Foundational processes to “Get it done” and “Implement”



# MERS Efforts Sustain Implementation

- *JCIDS Efforts (MCCDC) – Provides the JCIDS Analyses, traceability and ICD for DisOps efforts (and future transformation efforts)*
- *Concept includes (MCCDC) – Framework for DisOps and future transformation initiatives for the infantry squad*
- *Acquisition Efforts (MCSC) – Meets CMC desire for a single manager of Infantry efforts, Life Cycle Management, Integration, Human Factors, Strategic Planning, etc...*

***MERS Is A Holistic Approach that Supports Marine Corps' Current & Future Transformation Efforts***



# MERS...is not just about equipment

- It's implementing strategic/operational concepts at the squad level
- It's a mindset, it's a philosophy, it's a culture, it's DOTMLPF
- It ties everything together for the first time – MERS, DISOPS, Acquisition
- And it's designed to develop a better fighting machine  
– the **Marine Expeditionary Rifle Squad**

## Future Concepts



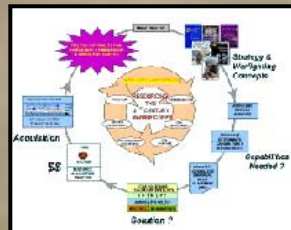
## Future Squad Operating Concept

- Squad Missions
- Squad Tasks
- Squad TTP



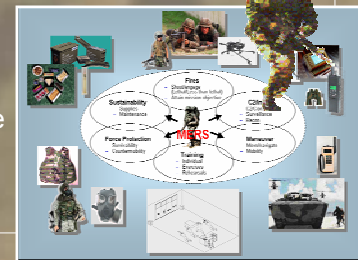
## Integrated Required Capabilities

- **Doctrine:** Goals for future fight
- **Organization:** Size of basic fighting unit
- **Training:** How to fight
- **Leadership & Education:** WF Culture
- **Personnel:** High quality, smart, leaders
- **Facilities:** Geared toward training



## Integrated Materiel Solutions

- Effective
- Functional
- Lighter
- Integrated
- Compatible
- Etc....





# MERS & Transformation

- MERS enables the Marine Corps to support current & future transformational efforts
  - Provides the vehicle by which transformational efforts can be sustained within the JCIDS & Acquisition Processes
- Regardless of the Concept, certain activities are required:
  - Overall Program Management of the entire system
  - Integration of various subcomponents
  - Weight reduction of the infantrymen's load
  - Human factors
  - Strategic Planning – plan for modernization in a coordinated & systematic way
  - Capability Prioritization – ensure we address the capability needs with the Infantrymen's highest priority
  - Configuration & Capability Set Management - deconfliction
  - Integrated system compete in the POM





# MERS 2-Pronged Attack

## Rapid Response

- Increased agility to react to the impact of emerging operational concepts (link among advocate, MCCDC & MCSC)
- Coordinate acquisition & fielding of equipment to support rapid response
- Coordinate with long term strategy to ensure sustainment and supportability

## Long Term Strategy

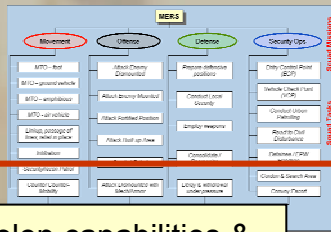
- Provides solutions in response to needs identified by current and future concepts
- Increases integration, efficiency & effectiveness of infantry small units
- Provides JCIDS legitimacy
- Provides configuration, life cycle management & support to fielded equipment



# MERS Analysis

1 Decompose MERS into Basic Squad Missions

2 Develop Squad Tasks and align with missions



Operational Mission	Mission Definition	Squad Task	Task Outcomes
Offense	Offense to disrupt enemy operations	Attack Enemy Disruptor	Disrupt enemy operations
Defense	Report defense position	Report defense position	Report defense position
Security Ops	Control from shore	Control from shore	Control from shore
Movement	Move to location	MTO - Boat	Move to location

3 Develop capabilities & associate with tasks

4 Validate Hierarchy with operators (missions, tasks, capabilities)

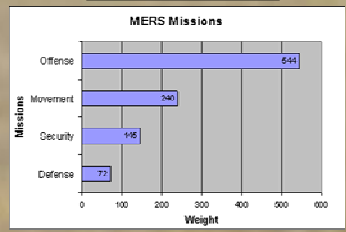
Functional Area	Required Capability	Definition	Classification
Offense	Attack Enemy Disruptor	Attack enemy disruptor	Offense
Defense	Report Defense Position	Report defense position	Defense
Security Ops	Control from Shore	Control from shore	Security Ops
Movement	MTO - Boat	Move to location	Movement

## MERS Conferences I & II

5 Prioritize Hierarchy

6 Apply Conditions

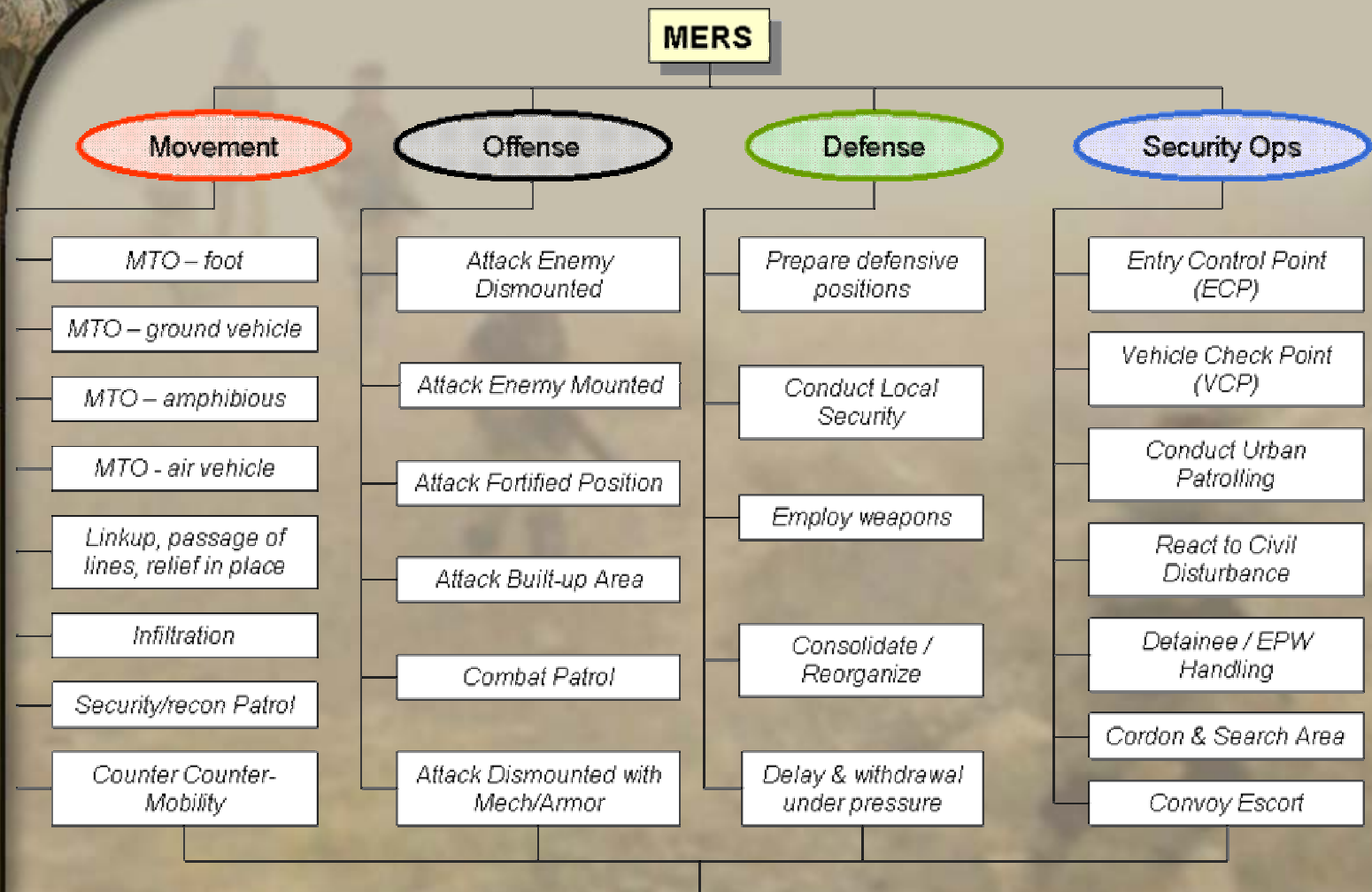
7 Develop Operating Concept



Terrain	Environment	Mobility	Line Support	Threat	Political/Legal	Other
Urban/Urban Area	Coast	Foot	Engine Only	Medium Machine Gun	None	None
Urban/Urban Area	Coast	Foot	Engine Only	Medium Machine Gun	None	None
Urban/Urban Area	Coast	Foot	Engine Only	Medium Machine Gun	None	None



# Details of Mission Decomposition I



Squad Missions

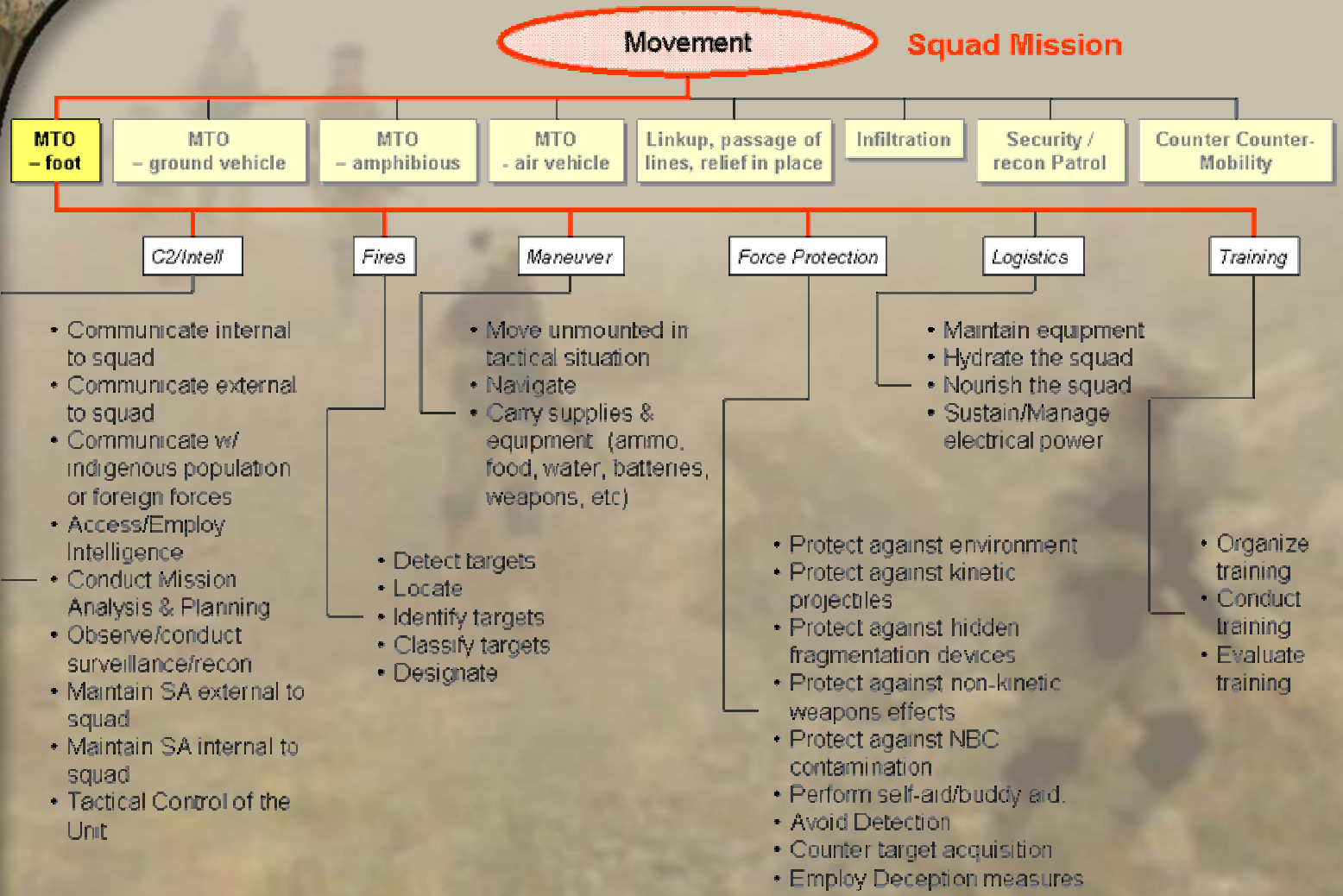
Squad Tasks

Squad Capabilities (Next Chart)



# Details of Mission Decomposition II

## Movement



Squad Tasks

Squad Capabilities





# Missions & Tasks Detail

Operation/ HHQ Missions	Mission Definition	Squad Task	Task Defintions
<b>Movement</b>	An offensive operation conducted to develop the situation and to establish, regain or maintain contact with the friendlies or the enemy.	Movement to Objective - foot	Tactical situation dictates movement of the unit by foot with the equipment necessary to accomplish the mission from the point of departure to the objective.
		Movement to Objective - ground vehicle / animal	Tactical situation dictates movement of the unit by ground vehicle with the equipment necessary to accomplish the mission from the point of departure to the objective.
		Movement to Objective - amphibious	Tactical situation dictates movement of the unit by amphibious vehicle (including small boats) with the equipment necessary to accomplish the mission from the point of departure to the objective.
		Movement to Objective - air vehicle	Tactical situation dictates movement of the unit by air with the equipment necessary to accomplish the mission from the point of departure to the objective.
		Conduct linkup / passage of lines / relief in place	Action conducted between two units requiring coordination to facilitate meeting, passing through one another or replacement
		Infiltration	Form of maneuver where an attacking force moves through enemy defenses without rupturing the position to gain a tactical advantage in order to conduct a follow on mission.
		Security/reconnaissance Patrol	Ground forces that are sent out with a specific reconnaissance task or security mission IOT gather information for early warning.
Counter Counter-mobility	Maintain movement and/or contact with enemy/friendly forces by crossing or reducing obstacles.		
<b>Offense</b>	To engage the enemy with fire and movement to defeat, destroy, or neutralize.	Attack Enemy Dismounted	An offensive action characterized by dismounted movement supported by fire.
		Attack Enemy Mounted	An offensive action characterized by mounted movement supported by fire.
		Attack Fortified position	An offense action that against an area that contains permanent defensive works consisting of emplacements, field fortifications, obstacles, permanent shelters, trenches, tunnels, etc.
		Attack Built-Up area	An offensive action that is characterized by close combat, limited fields of fire and observation, control difficulties, canalization of vehicles, presence of non-combatants
		Combat Patrol	Offensive action that is assigned a mission to destroy enemy troops, equipment, or installations (ambush, security, contact, economy of force, search & attack)
		Attack Dismounted with Mech/Armor	An offensive action where combined infantry/armor attack in situations where terrain or enemy defenses restrict the movement of mech/armor



# Required Capabilities Detail

Functional Area (FA)	Required Capability	Definition	Clarification
C2	Conduct Mission Analysis & Planning	Process information & Conduct Activities that are required to analyze & plan a mission	Manual and automated activities. METT-T
C2	Prepare orders, reports, records, overlays in order to present information	Committing plans/information to a form of communication for transmission to squad & external to the squad	Hard copy, electronic, verbal, manual, mental
C2	Tactical Control of the Unit	Control tactical movements, maneuver and actions of squad under all conditions	
C2	Communicate internal to squad	Transmission & reception of information within the squad to include issuing orders before and during the mission	Data, voice, video, hand & arm, pyrotechnics; without encumbering the mission (voice-activated hands-free), etc.
C2	Communicate external to squad	Transmission & reception of information between squad & other organizations to include receiving orders before and during the mission	Data, voice, video, pyrotechnics, OTH/across frequencies (including joint, air-ground). Includes continuous reporting of own location and transmission / receipt of reports, orders, combat ID / IFF, squad SA . May require simultaneous monitoring of multiple channels on a single radio.
C2	Communicate with indigenous population or foreign forces	Translation capability with non-English speakers	Written materials, flash cards, translation devices, training, etc
C2	Control Fires internal to the Squad	Employ and Direct squad fires, including attached weapons, through a variety of communications means	M-16, SAW, M-203, 240G, SMAW, etc
C2	Control Fires External to the Squad	Control and Direct fires from sources external to the squad through a variety of communications means	Includes CAS, NGFS, Arty, Mortars, Rockets, etc
C2	Record & store information	Recording & storing observations, information, etc. in std format	Notebook, palm pilot, video, audio, etc
Intell/SA	Access & Employ Intelligence	The use of intelligence information & products in planning & execution of mission	All sources as filtered to the squad; Includes WX
Intell/SA	Observe / conduct surveillance / reconnaissance	Activities associated with collecting, interpreting & disseminating information in area of operation to add to situational awareness	Under all conditions, either static or mobile. Includes employment of unmanned sensors & monitoring current terrain and weather conditions.
Intell/SA	Maintain SA about forces external to the squad	Squad collective knowledge of friendly, enemy, neutral elements in the area of operations as it applies to a changing/developing situation/environment	Location, mission, current operation, threat status, etc. -- 'unknown' elements include potential threats and neutrals (active & inactive)
Intell/SA	Maintain SA internal to squad	Squad collective knowledge about the squad and members of the squad as it applies to a changing/developing situation/environment to include knowing own location	Mission, tasks, commander's intent, supply status, GPS/digital map, combat ID, etc



# Hierarchy Mapping Detail



## Squad Tasks

Required Capability

Mission	Movement				Offense				Defense				Security					
	Loc / Patrol	Loc / Patrol	Loc / Patrol	Loc / Patrol	Attack	Attack	Attack	Attack	Combat Patrol	Attack	Prepare	Defeat	Defeat	Defeat	Defeat	Defeat	Defeat	Defeat
01 C2/SA - Conduct Mission Analysis & Planning	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
02 C2/SA - Plan routes, reports, reports, and plans	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
03 C2/SA - Plan routes, reports, reports, and plans	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
04 C2/SA - Plan routes, reports, reports, and plans	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
05 C2/SA - Communicate external to squad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
06 C2/SA - Communicate with indigenous population or foreign forces	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
07 C2/SA - Conduct intelligence gathering	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
08 C2/SA - Conduct intelligence gathering	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
09 C2/SA - Conduct intelligence gathering	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10 C2/SA - Access & Employ Intelligence	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
11 C2/SA - Observe / conduct surveillance / reconnaissance	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
12 C2/SA - Maintain SA about forces external to the squad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
13 C2/SA - Maintain SA internal to squad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
14 Files - Detect threats	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
15 Files - Locate targets	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
16 Files - Identify targets	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
17 Files - Classify targets	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
18 Files - Designate targets	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
19 Files - Engage threat to incapacitate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
20 Files - Engage threat with squad internal fires	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
21 Files - Engage threat with fires external to the squad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
22 Files - Employ Mines/Obstacles	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
23 Files - Evaluate the result of engagement	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
24 Mob - Move dismounted in tactical situation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
25 Mob - Move mounted in tactical situation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
26 Mob - Breach / reduce / clear obstacles	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
27 Mob - Re-supply	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
28 Mob - Carry supplies & equipment	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
29 Mob - Conduct obstacle	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
30 TFP - Protect against environmental conditions	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
31 TFP - Protect against IED (U.S. Forces)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
32 TFP - Protect against Mine IEDs	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
33 TFP - Protect against Hidden IEDs	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
34 TFP - Protect against Nonmine IEDs	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
35 TFP - Detect & protect against NBC contamination	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
36 TFP - Perform self/ buddy decontamination	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
37 TFP - Avoid detection	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
38 TFP - Counter target acquisition	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
39 TFP - Conduct field sanitation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
40 TFP - Employ deception measures	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
41 TFP - Search detainees / prisoners	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
42 TFP - Secure detainees / prisoners	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
43 TFP - Isolation in a water environment	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
44 TFP - Identification friend or foe (IFF)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
45 Log - Sustain & Manage Block Power	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
46 Log - Manage supplies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
47 Log - Hydrate the squad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
48 Log - Nourish the squad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
49 Log - Maintain equipment	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
50 Log - Re-arm the squad	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
51 Log - Medical aid & monitoring	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
52 Trng - Organize training	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
53 Trng - Conduct training	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
54 Trng - Evaluate training	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

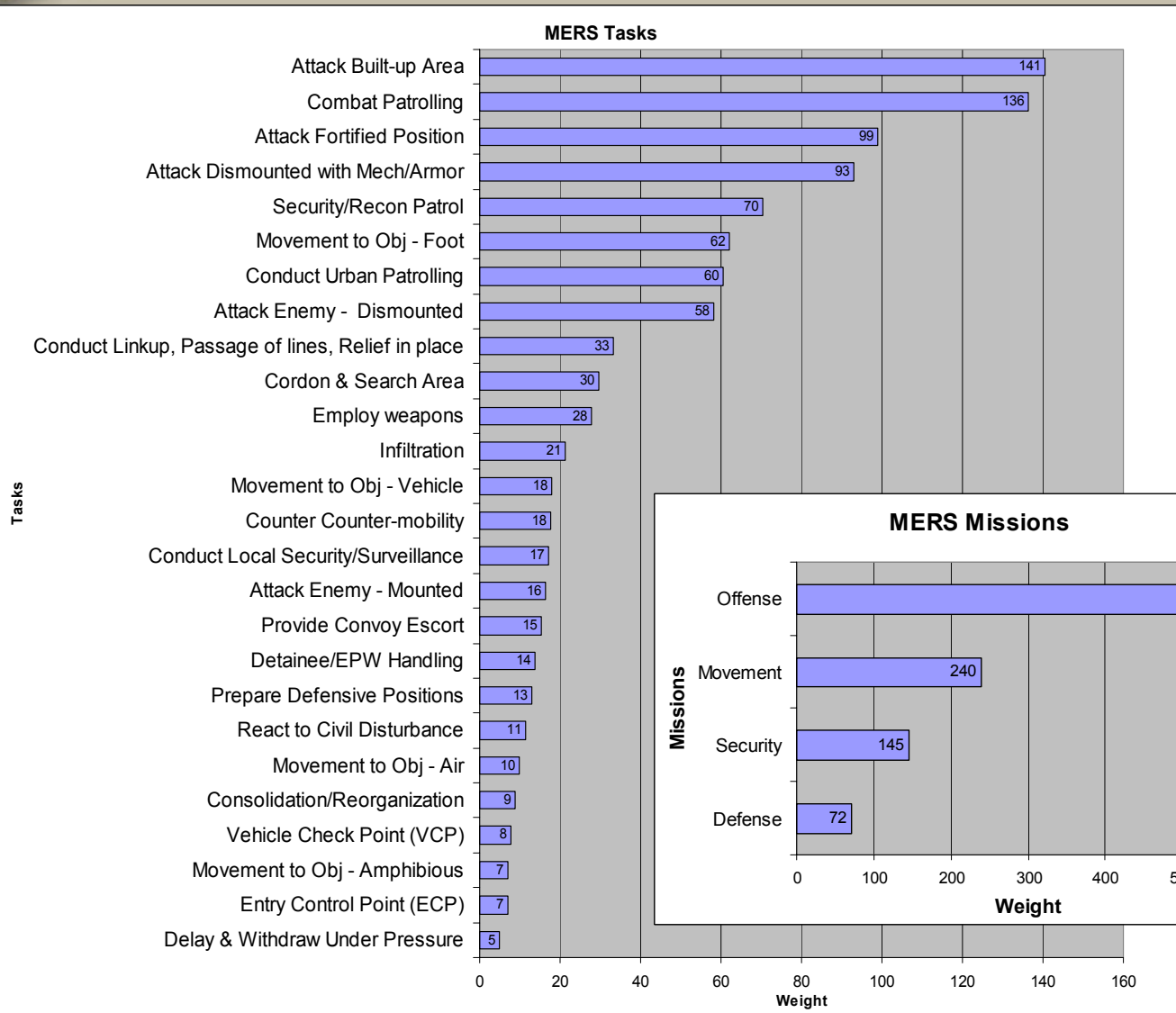
Required Capabilities

Task – Capability Mapping



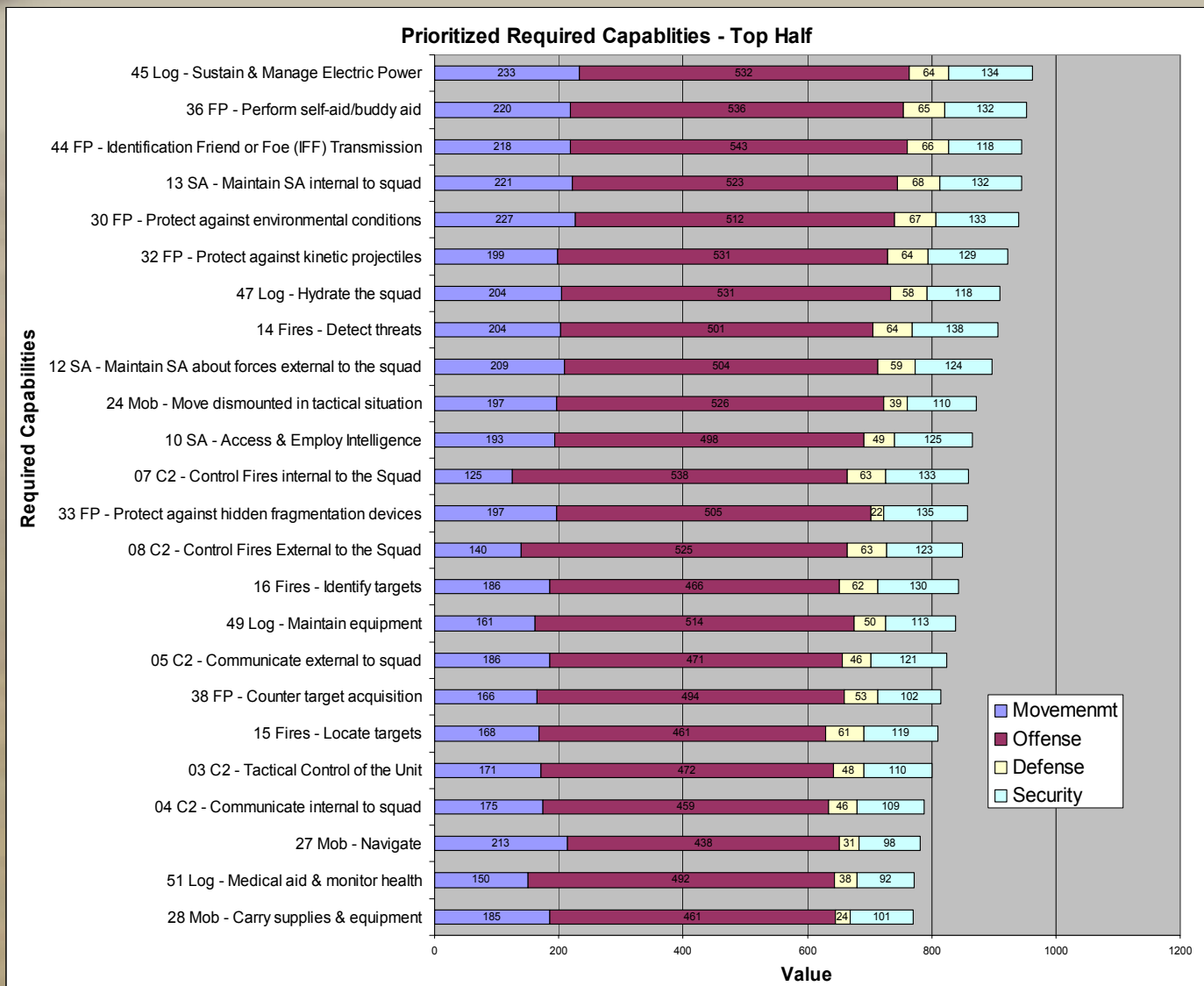


# MERS Prioritized Missions & Tasks





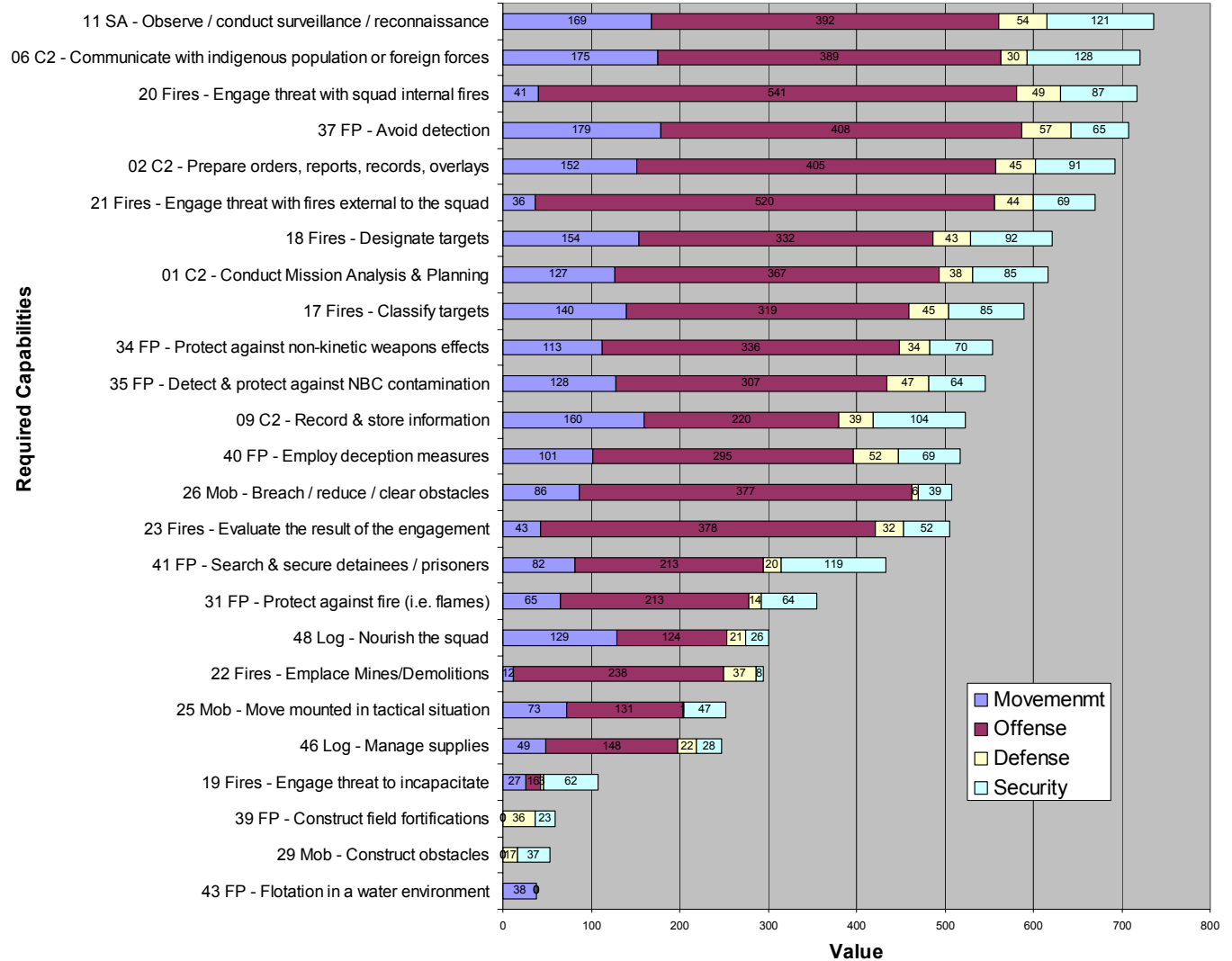
# MERS Prioritized Required Capabilities – Top 1/2



# MERS Prioritized Required Capabilities – Bottom 1/2



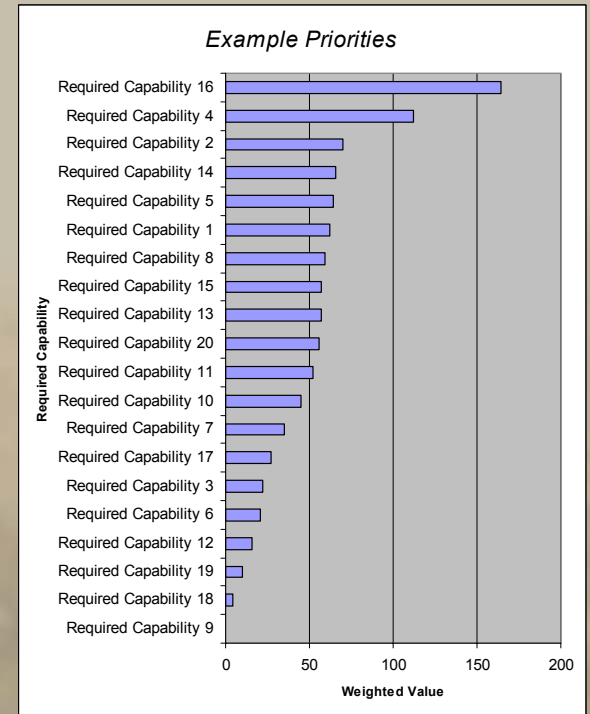
Prioritized Required Capabilities - Bottom Half



# Prioritization & Gap Analysis

## Prioritized Required Capabilities Assist:

- Plans, Policies & Operations to develop long term strategy for an integrated squad that will guide DOTMLPF issues into the future
- Advocates to focus efforts on meeting strategy
- Combat Developers to focus efforts that are most important to squad
  - Existing systems, current programs & DOTLFP solutions are mapped to required capabilities to determine gaps
  - High priority partial & full materiel gaps are identified in Capabilities Documents first
  - Priority integration issues are identified early in long term strategy
- Acquisition community focuses on high priority areas
  - S&T has direction based on high priority needs
  - Focus can be on high priority integration issues
- Program & Resources with distribution of resources in POM process to high priority gaps
- Training Community to focus on training areas that are most important to making an effective squad



Gap Analysis						
Priority	Required Capability	Benefit Value	Program 1	Program 2	Program 3	Program 4
1	Communicate Internal to squad	53	50% Solution		10% Solution	
2	Control Fires External to the Squad	76	Gap – No solution			
3	Engage threat with squad internal fires	31		30% Solution		
4	Navigate	21	No Gap – Existing DOTMLPF meets need			
...	Required Capabilities ...	x	...	...	...	...
54	Flotation in a water environment	1				100% Solution



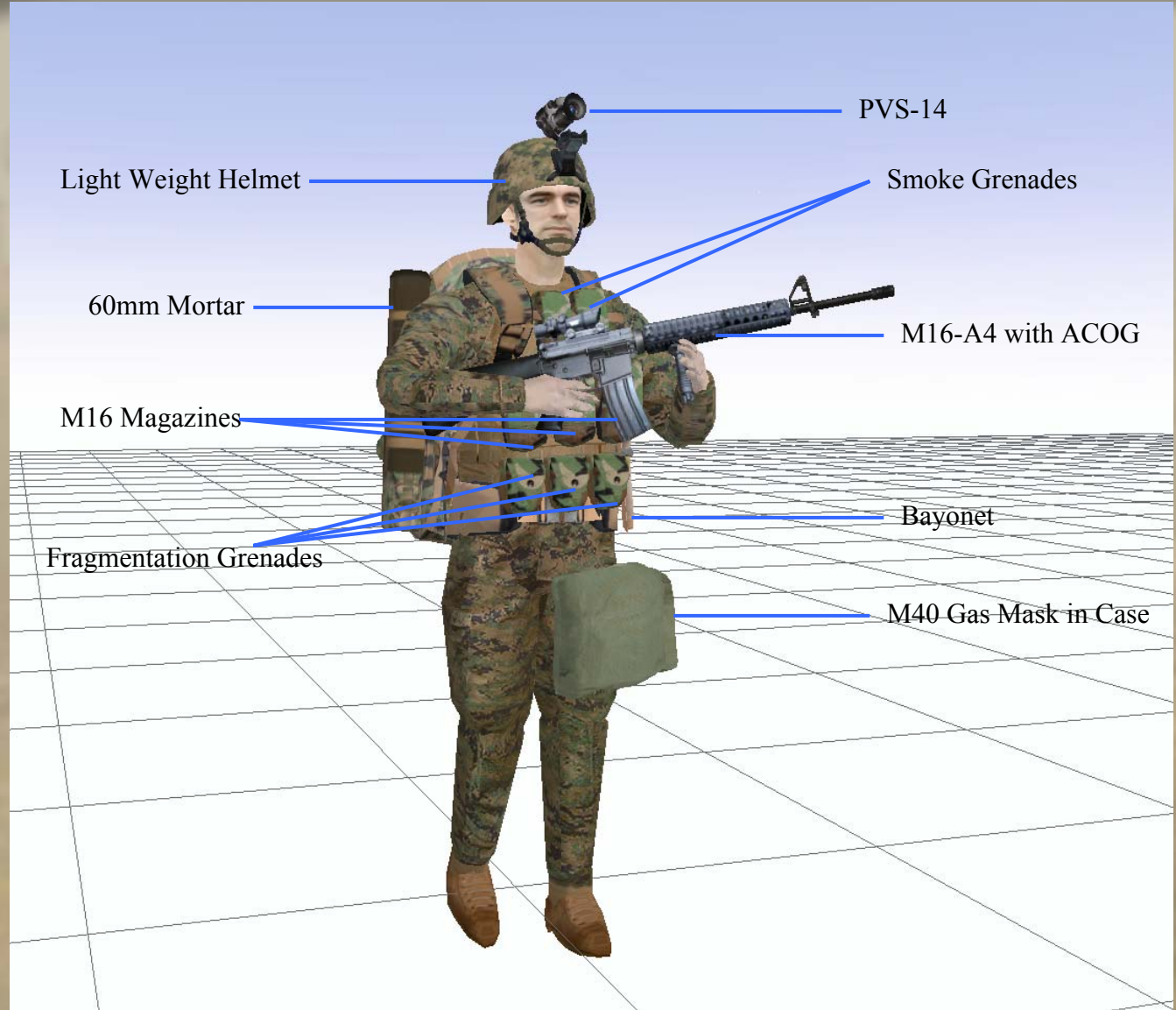


# Boston Dynamics





# ILBE Load Carriage Configuration- front view



- PVS-14
- Light Weight Helmet
- 60mm Mortar
- M16 Magazines
- Fragmentation Grenades
- M16-A4 with ACOG
- Smoke Grenades
- Bayonet
- M40 Gas Mask in Case



# Marine Enhancement Program

## MEP Program Benefits:

- Provide a quick turn around for the Infantry
- Focus on getting the items that are needed, quickly
- Never more than a year away from a funded program
- MEP is designed to quickly test & field COTS items
- Many programs that have a positive impact on the infantry originated from MEP
- New programs do not require an UNS
- Congressional intent is to support the individual Infantry Marine



# Marine Enhancement Program Successes

## SURVIVABILITY

- Anti-Exposure Suit
- Cold Weather Sock System
- Cold Weather Clothing and Equipment Program
- Family of Body Armor
- Ghillie Suit Accessory Kit
- Improved Bivy Sack
- Improved Cold Weather Mitten
- Sand Bagging System
- Intermediate Cold/Wet Glove
- Lightweight Cold Weather Underwear System
- Lightweight Helmet

## C2

- MEP - Hand Held Global Positioning System for the Fire Team
- MEP - Miniature Binoculars



## LETHALITY

- M240G Tripod Sling
- M249 Ammo Pouch
- Lightweight Medium Machine Gun Tripod System
- Improved Heavy Machine Gun Ground Mount System
- Combat Assault Sling
- Multipurpose Bayonet
- Monocular Night Vision Device

## MOBILITY

- Assault Snowshoe
- Cold Weather Equipment Sled
- Mechanical Breacher Kit
- Marine Assault Climber's Kit

## SUSTAINABILITY

- Individual Water Purifier
- Multipurpose Cart
- Infantry Combat Boot
- Infantry Shelter







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