Kevin McConnell
Fires & Maneuver Integration Division
Headquarters U.S. Marine Corps (CD&I)

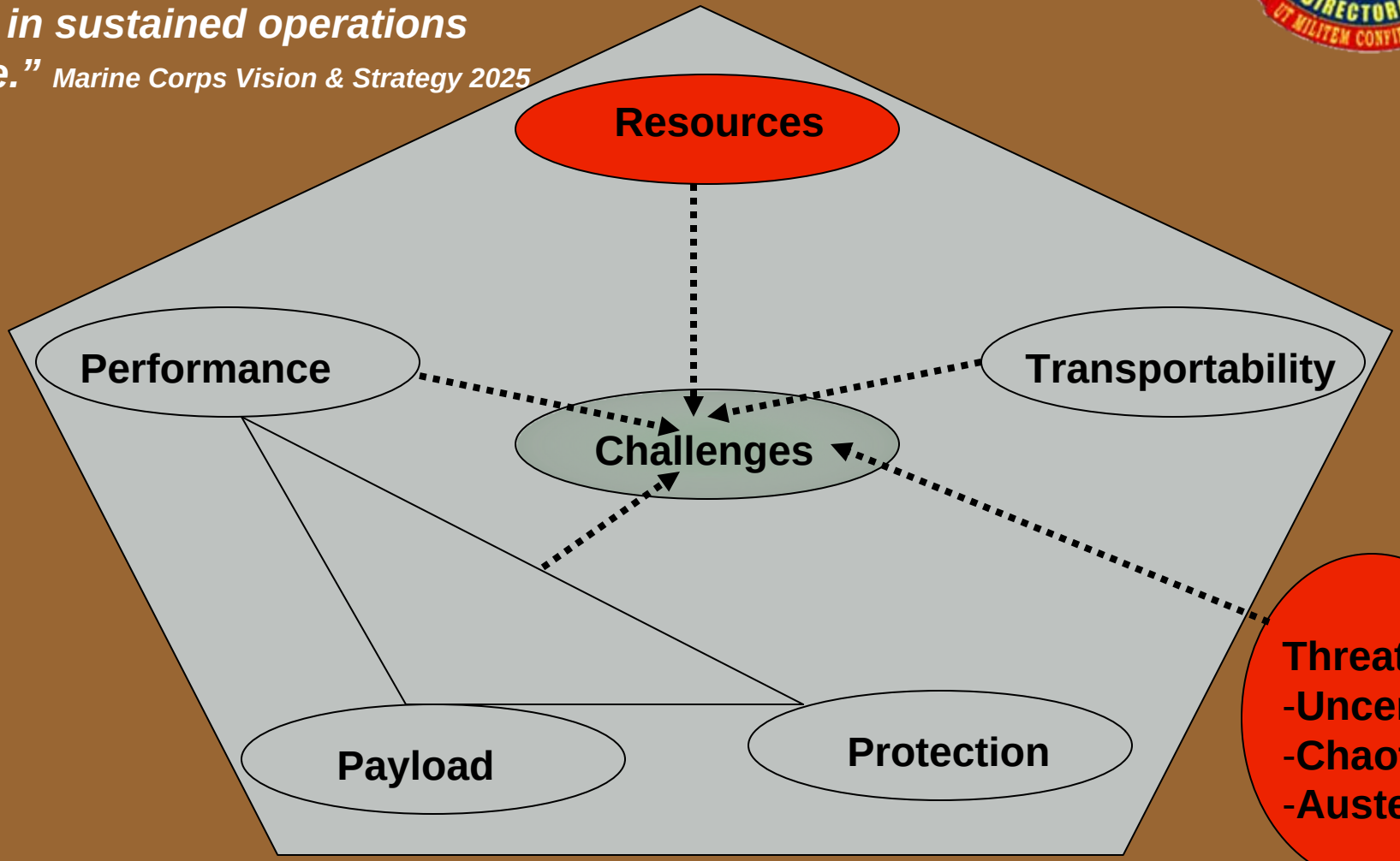
"We have been prepared in the past because we understood that a force in readiness must be well-trained, broadly educated, and **properly equipped** for employment across all forms of warfare."

--Marine Corps Vision & Strategy 2025
James T. Conway
Commandant of the Marine Corps

Wave Top View of:

- **Mobility**
- **Fires**
- **UAS**
- **The Marine**

"The Marine Corps of 2025 will fight and win our Nation's battles with multicapable MAGTFs, either from the sea or in sustained operations ashore." ***Marine Corps Vision & Strategy 2025***



The Marine Corps is committed to providing the Nation its expeditionary "Force of Choice" for tomorrow's challenges.

Marine Corps Tactical Wheeled Vehicle Strategy

- **Flexible and responsive**
- **In light of the changing security environment and the Marine Corps' expeditionary nature the strategy will;**
  - **Take maximum advantage of existing platforms**
  - **Emphasize a mixed fleet approach that spans the "iron triangle"**
  - **Integrate MRAP into the fleet mix**
  - **Transition to a fleet of tactical vehicles that have scalable protection (integrated A-kit and armor B kits)**
- **We will do this through a series of Decision Points that examine changing conditions**

It is not a plan to provide an armored seat for every Marine

Ground Combat Tactical Mobility

General Support Mobility
-Retain capacity

EFV

Marine Personnel Carrier

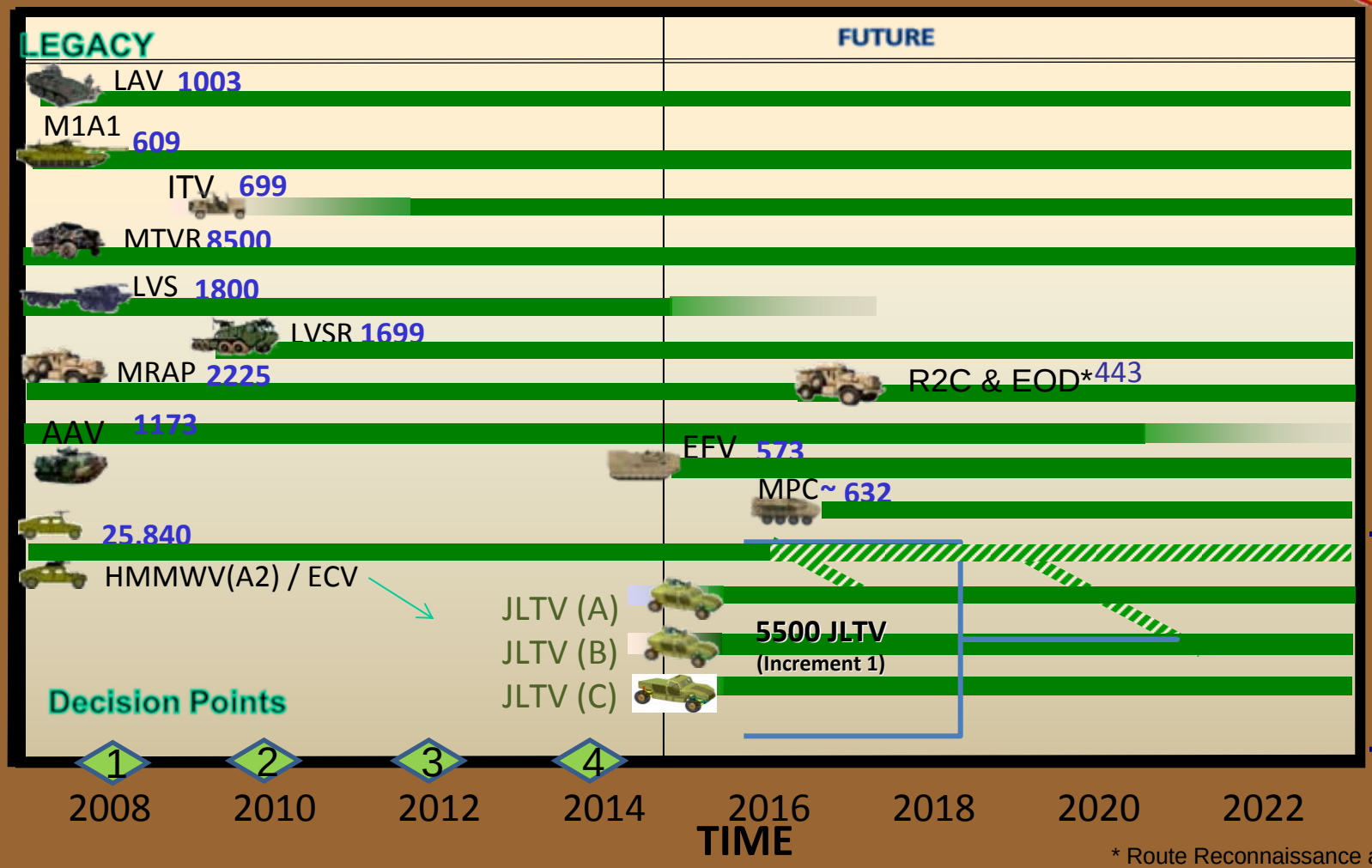
Multipurpose Mobility
-Regain payload

JLTV
Family of Vehicles

Specialized Mobility
-Increase flexibility

Internally Transportable Vehicle

Decision Points to Mitigate Risk

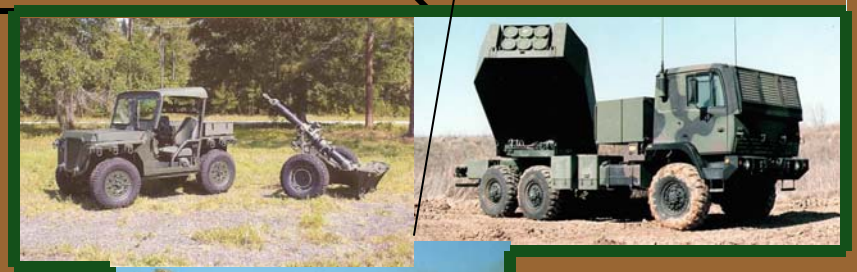


* Route Reconnaissance and Clearance
Explosive Ordnance Deposal

Expeditionary Fires

Naval Fires Triad

Fix Fires Initiative



Fires is almost “fixed”

EFSS

- 2009 – Scheduled First Fielding – 10th Marines, IOC – 1 Battery
- 2012 – Estimated full fielding, 10 Battery sets to OpForces, 6 systems to Schoolhouse

LW155 – M777

- 2005 – IOC – 1 Bn fielded – 11th Marines
- 2007 – Retrofit of previously fielded M777’s and future production transitioned to all M777A2’s with complete Digital Fire Control System (to include Excalibur Platform Integration Kit)
- 2011 – Estimated full fielding complete

HIMARS

- 2006 – First Battery Fielded
- 2008 – IOC – 1 Bn Fielded – 5th Bn, 11th Marines
- 2010 – Estimated FOC – 2 Bns and Schoolhouse fielded.

Shift focus to munitions

USMC NSFS Requirements Pedigree

Requirements are:
-Stable
-Fiscally constrained
-Operationally informed

1992
1993
1995
1996
1999
2002
2004
2005
2006

NSFS MNS

NSFS COEA

VAN RIPER LETTER

RHODES LETTER

GAO 1995 NSFS

MULLEN LTR 2000 EXPO FIRES

HANLON LETTER

JOINT FIRES ICD

GAO 2004 NSFS

CMC VIEWS ON NSFS

MROC DM 44-2005

GAO 2006 NSFS

Joint MFR 2008 AOA

USMC NSFS Requirements for STOM
(Maneuver, Counterfire and Target Acquisition)

			Near-term	Mid-term	Far-term
System Response		Threshold	2.5 minutes	2.5 minutes	2.5 minutes
		Objective	Limits of technology	Limits of technology	Limits of technology
Range	Naval Guns	Threshold	41 nm	63 nm	97 nm
		Objective	63 nm	97 nm	Limits of technology
	Other NSFS Systems	Threshold	200 nm	200 nm	262 nm
		Objective	222 nm	222 nm	Limits of technology
Accuracy & precision		Threshold	50 m CEP	50 m CEP	50 m CEP
		Objective	20 m CEP	20 m CEP	20 m CEP
Target acquisition		Threshold	50 nm	63 nm	97 nm
		Objective	63 nm	97 nm	Limits of technology

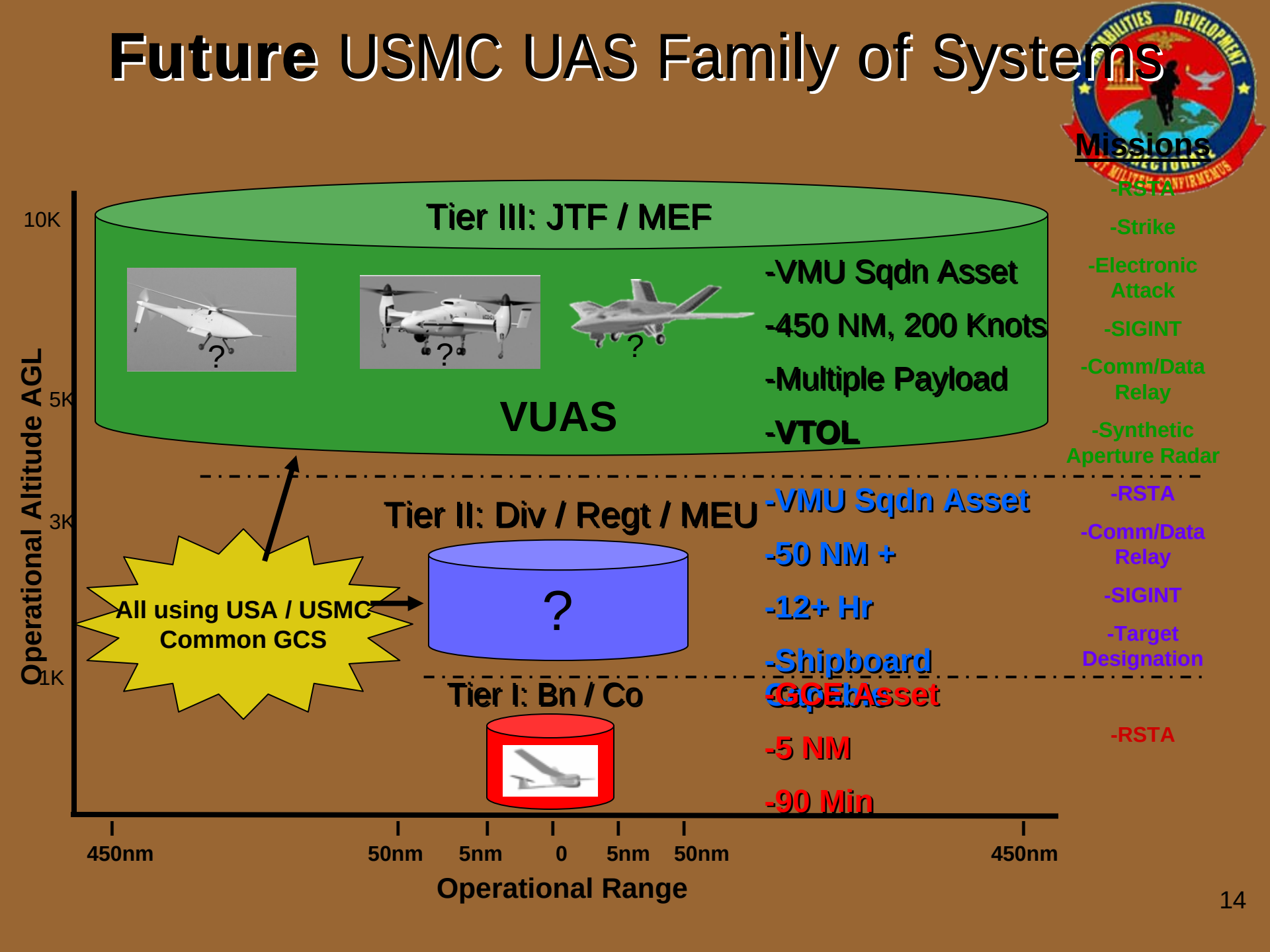
Ordnance Effects	No specific naval gun ammunition types, priorities or percentage of magazine are indicated. Development and fielding of NSFS systems should focus on warhead and operational effects.	• Destroy/neutralize/suppress area targets (personnel/material) • Destroy/neutralize/suppress moving targets • Destroy moving targets (with terminal seeker) • Destroy high-payoff, point targets • Destroy hardened targets • Mark targets for battlefield observation • Provide obscuration (prevent enemy observation of friendly forces or own forces) • Set fires to enemy material and facilities • Illuminate battlefield at night. • Mark targets for battlefield observation during periods of reduced visibility
Volume of fire	• Volume equally important to precision • Massed fires • Suppression • Combined arms effects • Close fire support (see illustrative scenario) • Sufficient quantities are maintained to sustain desired effects over time	
Sustainment	All systems sustainable via UNREP	

Source: NAVAL SURFACE FIRE SUPPORT REQUIREMENTS FOR EXPEDITIONARY MANEUVER WARFARE 19 Mar 2002 (Hanlon Letter)

Unmanned Aircraft Systems

Robust intelligence capabilities will support all levels of command awareness and decision making

Future USMC UAS Family of Systems



Current Operations

Tier III

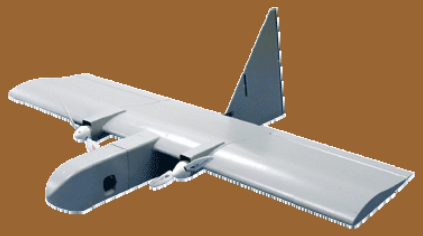
Shadow

Tier II

Scan Eagle

(service contract)

Tier I



Dragon Eye

Raven B

Wasp

Desired UAS End-State

- Standardized Command and Control Interfaces
  - Standard/ scaleable Graphical User Interfaces
  - Open-architecture/ Software Reprogrammable C2 links
  - Standardized sensor data formats/ interfaces
  - “Plug-and-Play”/ Replaceable Air Vehicle
- RF Bandwidth congestion reduction
  - On aircraft/ autonomous sensor data management
  - Multi-band/ tunable C2/ sensor links
- Sensor data management/ dissemination
  - Autonomous Processing
  - Demand-pull Dissemination
  - Demand-pull Archiving
- Plug-and-Play Payloads designed to defined SWaP constraints and standardized interfaces

Future Capabilities

- Cargo UAS –emerging requirements for unmanned logistics delivery
- Persistent Strike- Developing tactic to maintain weapons platform on station for extended period without extensive sortie rate (Hunter-Killer teams)
- Adverse weather and foliage penetration capabilities
- Wide Area Surveillance
- Interoperability and Network capabilities

Focus on the Individual Marine. The individual Marine will remain our most important warfighting asset…

LWH
Light Weight Helmet
3.45 lbs

Helmet Cover
0.15 lbs

MTV
Modular Tactical Vest
8.4 lbs

E-SAPI
Enhanced Small Arms
Protective Inserts (x2)
10.9 lbs

Side-SAPI
Side Small Arms
Protective Inserts (x2)
7 lbs

Magazine
with Ammunition (x13)
13.65 lbs

MPB
Multi-purpose Bayonet
1.3 lbs

MRE
Meal Ready to Eat (x3)
3.9 lbs

ICB
Infantry Combat Boot
4 lbs

IFAK
Individual First Aid Kit
1.0 lbs

Ballistic Eye Wear
0.15 lbs

Ear Plugs
with case
0.1 lbs

Hydration System
with water
6.3 lbs

M16 A4
with attachments
8.98 lbs

Pouches
1.9 lbs

G940 Green Smoke Grenade (x2)
4.0 lbs

G8811 Frag Grenade (x2)
4.0 lbs

Gloves
0.33 lbs

Knee and Elbow Pads
1.0 lbs

ILBE
Individual Load Bearing Equipment
10.5 lbs

Combat Assault Sling
0.42 lbs

Over 91 pounds

Current

USMC Clothing Layers

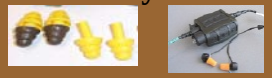
FROG

Flame Resistant Organizational Gear

Lightweight Helmet

ESS

Ballistic Eye Protection



Quietpro

Hearing Protection / Enhancement

MTV / EPC

Tactical Vest / Carrier w/Plates

Quadgard

Additional Protection Materiels

ILBE

Individual Load Bearing Equipment

Requirement

Payload

Lighter, Integrated, Modern, Modular, Scalable Durability, Systems Approach
2 MEU / 2 MEB Capability

Lighter, Integrated, Improved Performance Contingency Capability

Lighter, Integrated, Modular, Scalable Improved Performance (7.62)
All Marines

Lighter, Integrated, Laser Protection, Compatible Inserts
All Marines

Lighter, Integrated, Improved Capability
All Marines

Lighter, Integrated, Modular, Scalable Quick Release, Weight Distribution, Increased Protection, Systems Approach
All Marines

Lighter, Integrated, Improved Capability
As Required

Lighter, Integrated, Modular, Scalable
All Marines

Protection

Performance

Future

7 Layer System

Inclement Wx Combat Shirt

Joint Headborne System

Improved Modular Eye Protection

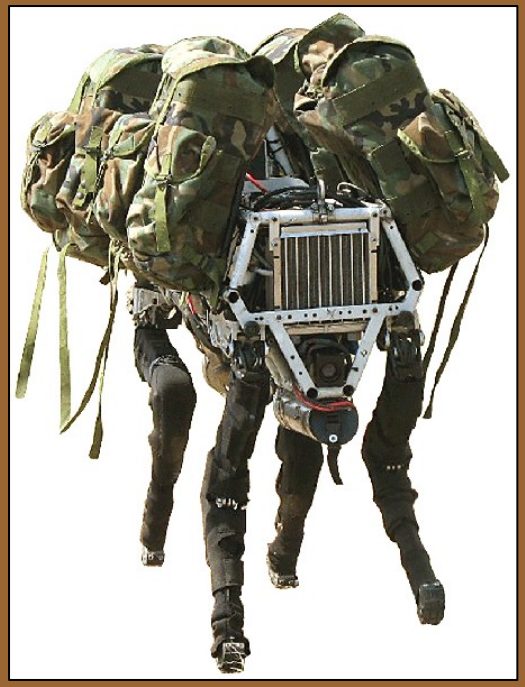
Improved Hearing Protection / Enhancement

Improved Modular Tactical Vest / Carrier

Integrated Solution

Integrated Solution

Transfer the Load



Boston Dynamic's Big Dog


QUESTIONS?