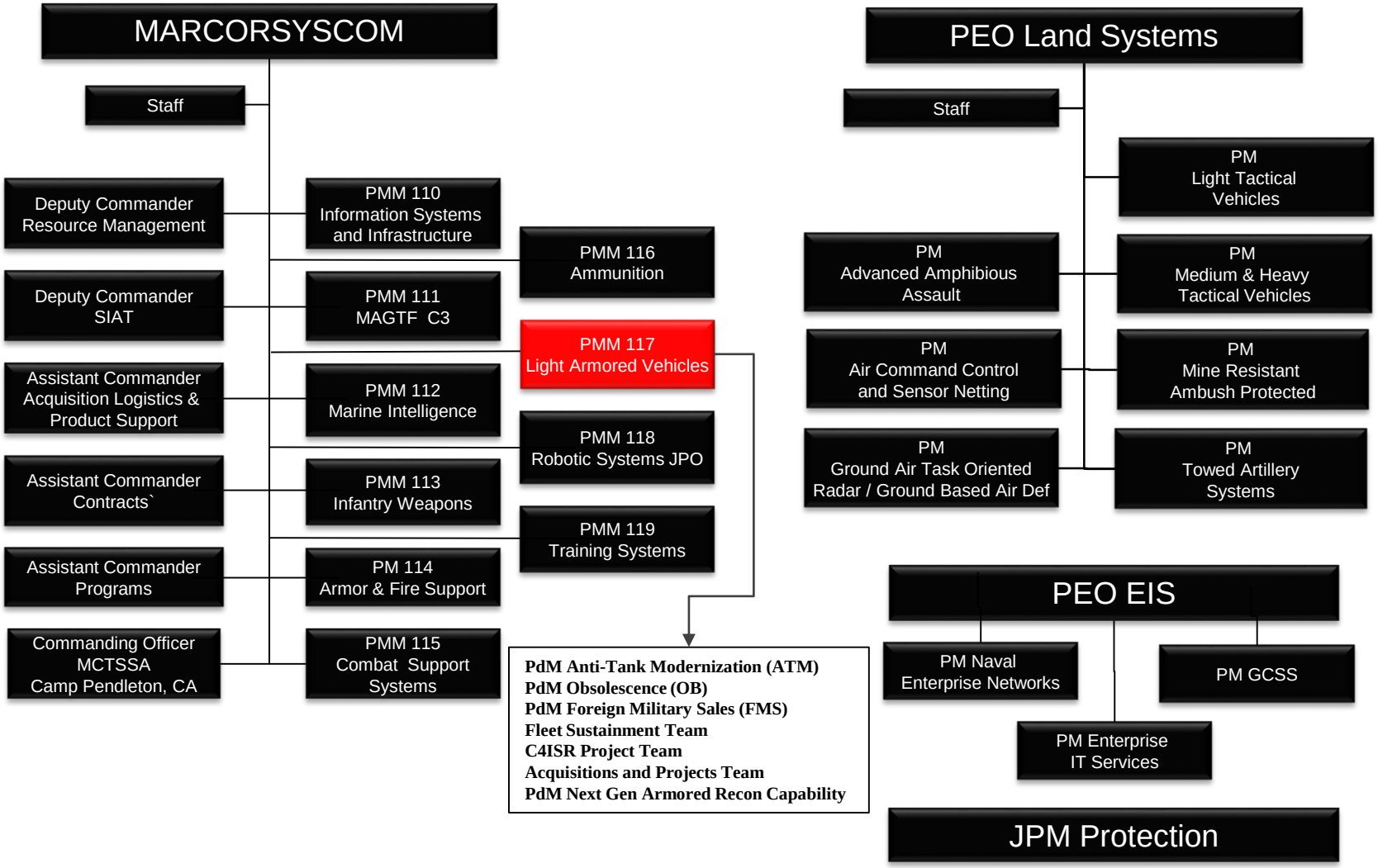
Program Manager
Light Armored Vehicles

Expeditionary Warfare Conference
12 October 2016

MARINE CORPS SYSTEMS COMMAND

HOME OF THE MARINE CORPS ACQUISITION PROFESSIONALS



USMC Family of Light Armored Vehicles

Command & Control

Logistics

Mortar 81MM

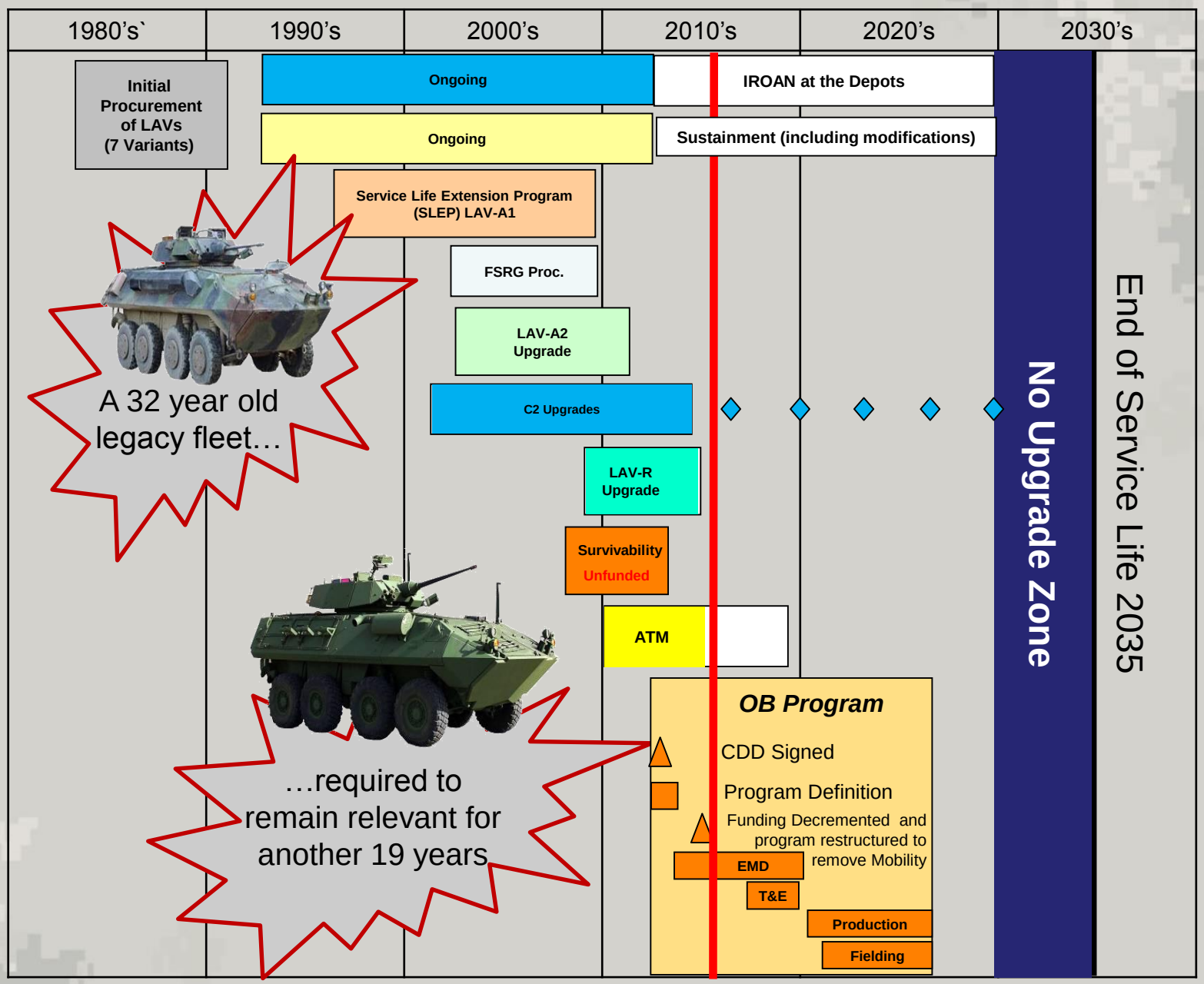
25MM Light Assault

Recovery

Electronic Warfare

Anti-Tank

Status of Marine Corps Light Armored Vehicles (Past and Current)



Status of Marine Corps Light Armored Vehicles (Future)

2010s | 2020s | 2030s | 2040s | 2050s | 2060s

IROAN at the Depots

Modifications & Sustainment

C2 Upgrades

OB Program
- EMD
- T&E
- Production
- Fielding

Suspension modification New Start TBD
- EMD
- T&E
- Production
- Fielding

ATM

Army LVAD LAV Program TBD

Next Gen Light Armored Recon Capability
- REQ DEV
- EMD
- T&E
- Production
- Fielding

A3 Fleet Service Life 2035

An A3 fleet with obsolescence mitigation…

…a new capability for 2030 and beyond.

Product Improvement

USMC - PM Light Armored Vehicles

($M)	FY16	FY17	FY18	FY19	FY20	FY21
MOD (OB) – RDT&E	$11.3	$13.9	$4.5	$2.5	$0	$0
MOD (OB) – PMC	$0	$0	$38.8	$66.1	$129.6	$118.9
ATM – RDT&E	$0	$0	$0	$0	$0	$0
ATM – PMC	$87.3	$54.1	$34.9	$0	$0	$0
Modifications – RDT&E	$0	$0	$0	$0	$2.5	$2.5
Modifications – PMC	$0	$0	$2.0	$2.0	$2.0	$2.0

PresBud 2017 Figures

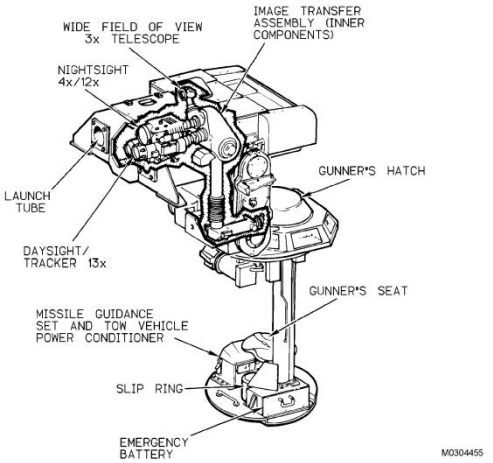
A mission suite upgrade that addresses obsolescence and provide improved reliability, availability, and maintainability

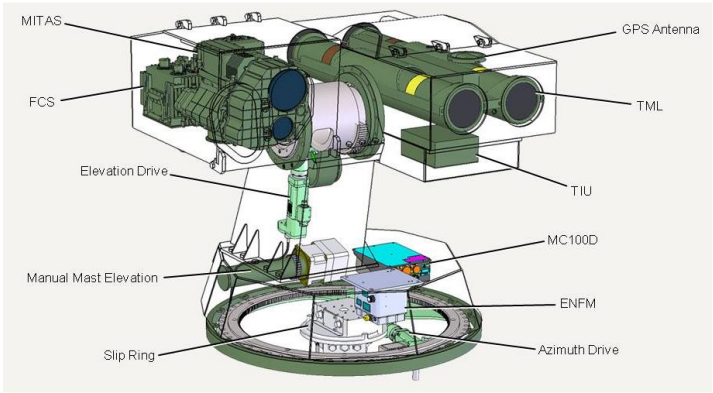
Scope:

- Acquire targets while on-the-move, precision long-range capability to destroy enemy tanks along with advance thermal sight and advanced guidance control system

In the production and deployment phase

Anti-Tank Modernization Program





Emerson 901 Turret (Legacy)

- **Turret is manned, gunner sits in turret**
- **Guidance set (=FCS) located under gunners seat in turret**
- **Has optical path and thermal imager in hammer head**
- **Has a hydraulic drive system**
- **Can't be erected while on the move**
- **Sighting system must be removable for ground mounting**
- **Has no laser range finder**
- **Has no Far Target Location system**
- **Manual turret drive back-up is by manual hydraulic pump**
- **Turret has vision blocks**
- **Turret has gunner's hatch**
- **Has small emergency battery for sighting system only**
- **Hydraulic stow with mechanical back-up**
- **No protective cover for day sight tracker**
- **Only Gunner has video and optical sight view**

ATWS Turret

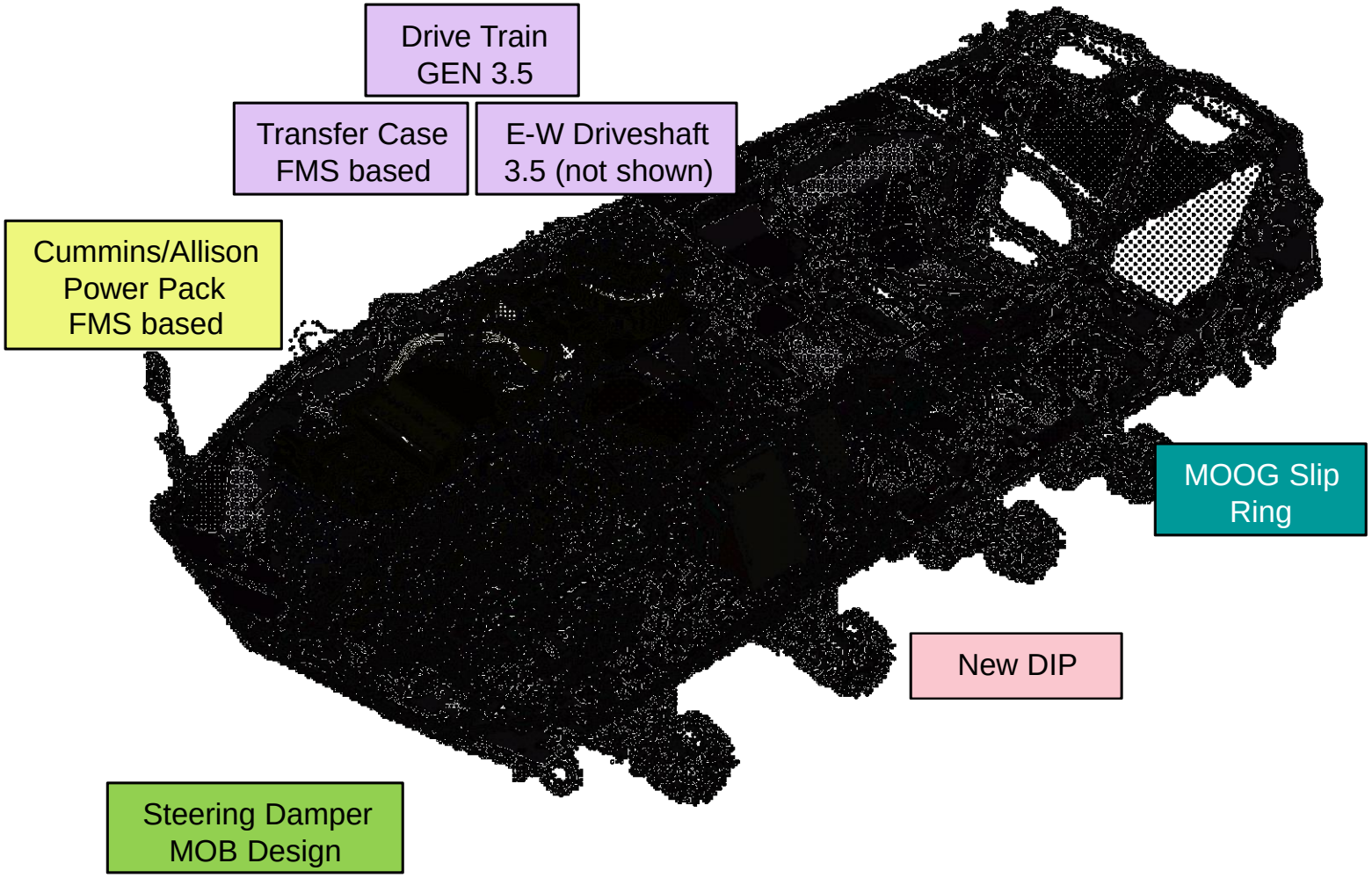
- **Turret is unmanned, gunner sits in vehicle chassis**
- **Exterior armored sensor enclosure houses MTAS & FCS**
- **Has Day Camera and Thermal Imager in the hammer head**
- **Has an electric EL & AZ drive system**
- **Is erect on the move and only placed in Stow for Transit**
- **Sighting system is hard mounted**
- **Has eye safe laser range finder**
- **Has Far Target Locator capabilities**
- **Has backup mechanical El and Az drive**
- **Turret has no vision blocks**
- **Back-up battery system for independent turret operation**
- **Manual mechanical stow**
- **Armored ballistic door cover for MTAS**
- **Gunner and commander have video sight displays**
- **Auto TML missile loading position capability**

Restore lost platform performance due to increased GVW and correct significant automotive obsolescence issues by utilizing mature technology

- Scope:
  - Replace power pack (engine and transmission)
  - Replace driveline (T-Case, differential, driveshaft)
  - Replace steering system (durability, reliability issues)
  - Replace slip ring and Driver's Instrument Panel (obsolescence and compatibility)

- In the engineering and manufacturing development phase

Obsolescence Program



Other projects/efforts

- Driver's Seat Safety Modification
- Buoyancy Improvement Kit
- Underbody Survivability
- EPLRS replacement
- Joint Battle Command-Platform (JBC-P) integration
- CREW Vehicle Receiver/Jammer (CRVJ) counter IED system integration
- Intercom System reliability improvement

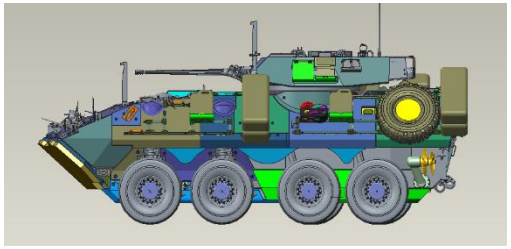
Driver's Seat Safety Modification

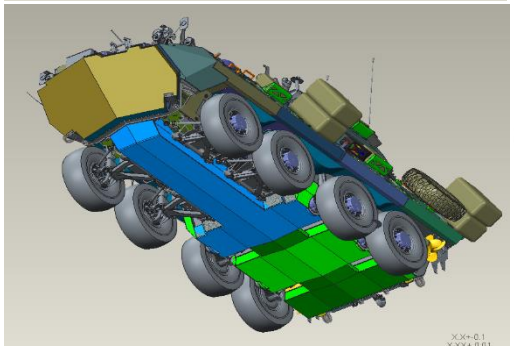
Driver's seat controls being refined to improve seat operation and driver safety

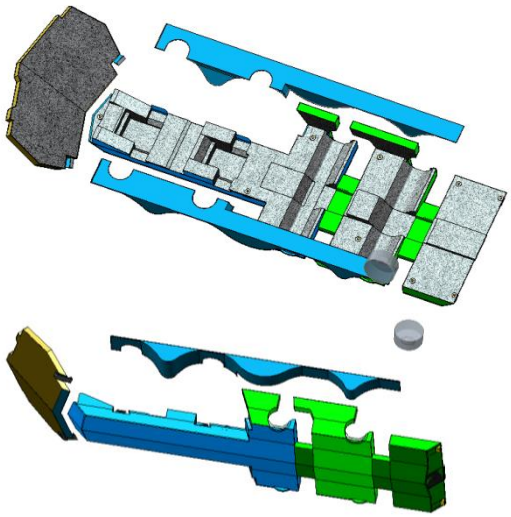
Scope:

- Seat pneumatic valve control provides an improved control of seat rise and lowering and provides a "return to center" that automatically stops seat at any desired seat height
- Replaces current locking pin with a more accessible mechanism with locked/unlocked visible indicator from inside driver's compartment as well as aft

Buoyancy Improvement Kit







Restore the freeboard and buoyancy lost due to weight growth from add-on armor and other upgrades over the years

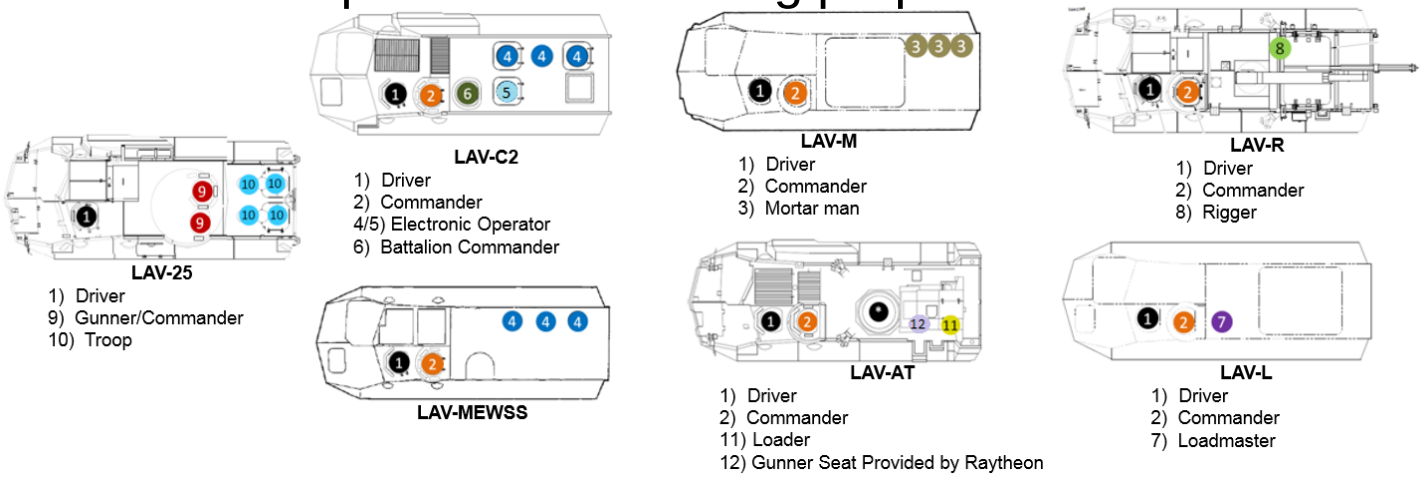
- Scope:
  - Incorporates buoyancy materials and compartments to restore over 1,700 lbs of buoyancy
  - Leverages lighter weight materials that provide equivalent underbody IED protection performance as compared to currently fielded underbody protection kit

Configuration	Kit volume displace-ment (Water)	Buoyancy Weight Reduction	Weight of Kit	Total Buoyancy Gain
½ 5059 Al Bottom, ¼ 5059 Trim Vane, 1/8 5059 Al elsewhere, 1.9 PSF foam	1.225 M^3	2700 lbs	928 lbs	1,772 lbs

Addresses CDD defined IED protection requirements by integrating energy attenuation seats in all seat locations for all variants

Scope:

- Provide energy attenuating seats that could meet developed performance specification and fit within space claims as defined in Interface Control Document
- Redesign of scout compartment and relocation of LAV-25 fuel tanks that also incorporates self-sealing properties



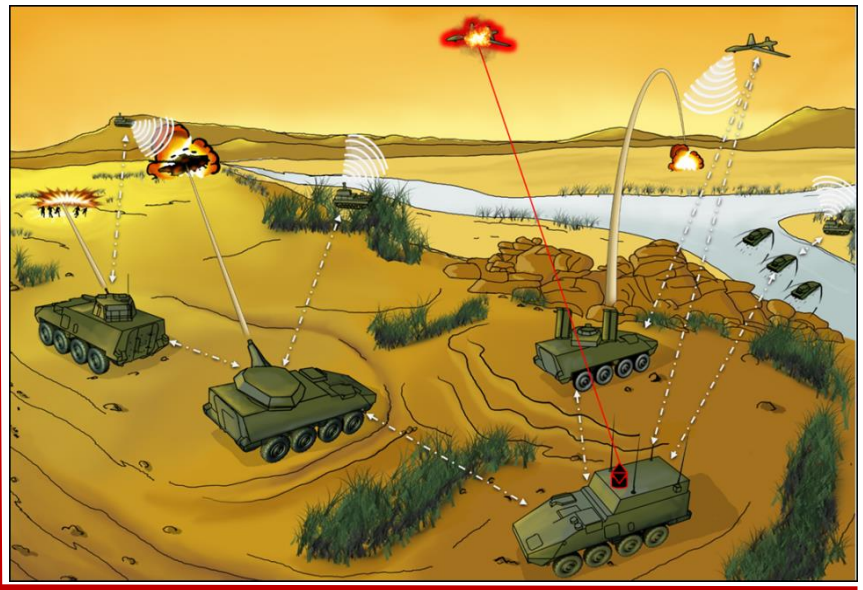
Next Gen Armored Recon Capability

Next Generation Light Armored Reconnaissance

- FMID preparing POM-19 new start initiative for Next Gen Armored Reconnaissance (LAV Replacement)

Current Light Armored Reconnaissance

- LAV end of service extended from 2005 to 2035



Current Capability Assessment

- LAR units experience capability and capacity gaps and shortfalls in their ability to conduct combined arms reconnaissance and surveillance, counter-reconnaissance, raids and offensive actions, security and defensive operations in support of maneuver, while operating across extended lines of communication with minimal external support:

  - Sense, orient, track, classify, and defeat incoming threats; Active Protection
  - Organic ground and unmanned sensing capability to extend surveillance reach and expand the security area
  - Networked C4I and fire control capability/capacity
  - Water mobility to expand the maneuver space
  - Land mobility to conduct operations while keeping pace with the future MAGTF
  - Effective, organic, all-weather direct and indirect fire systems to fight and win the counter- reconnaissance battle
  - Lethality to deliver effective direct fire effects at range to defeat threats; defeat close-in enemy heavy armor threats with organic heavy anti-armor weapons; effectively execute the LAR commander's EFSTs with organic precision indirect fires
  - Full spectrum tactical EW capability.
  - Force protection and system survivability for the emerging & forecasted threats
  - Kinetic and non-kinetic counter-UAS

Next Gen Way Ahead

- Draft gap statement for POM-19 validation (Marine Corps Gap List)
- Develop POM-19 New Start Initiative
- Planning study / analytical activities to support Armored Reconnaissance CBA in conjunction with POM-19 CBA
- Draft and staff an Initial Capabilities Document (ICD)
- Draft and Staff concept of employment
- Develop supporting acquisition strategy
- Review available trade space analysis tools and organizations (contracted and Government)

Foreign Military Sales

LAV-25 	Personnel Carrier 	Ambulance 	Recovery 
Anti-Tank 	Anti-Tank – A2 	Mortar 	Mortar – A2 
Command & Control 	Engineer 	Ammo Carrier 	Assault Gun 

2,104 Total Vehicles Sold Internationally to Date

Light Armored Vehicle Business Opportunities

Title	Funding	Planned RFP
Driver's Seat Safety Modification Kit Production: (8(a) Small Business Set Aside)	PMC	4Q FY17
LAV-ATM Desktop Operator Trainer: Development/Procurement (via PM TRASYS)	PMC	4QFY17
Underbody Survivability: Energy Attenuation Seats (all positions)	N/A	RFI Release: 1QFY17
Survivability Improvement: LAV 25 Scout Seats and Self Sealing Fuel Tank	N/A	RFI Release: TBD