



# *Firepower Symposium*

**Project Manager  
Brigade Combat Team**



## *The Road To The Objective Force "Armaments for the Army Transformation"*

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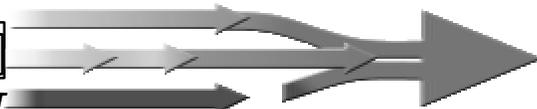
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# Army Vision Statement

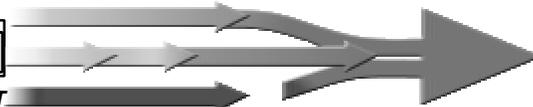


**“The Best Off- the- shelf Technology Available Today, The IBCTs Will Bridge That Operational Shortfall And Help Meet Warfighting And Contingency Needs For The Next Twenty- plus Years. This Interim Force Will Also Serve As The Experimental Vanguard For The Objective Force. It Will Validate Operational And Organizational Concepts, Training And Leader Development Initiatives, And Deployment Scenarios For The Next Nine Years As We Await The Arrival Of The Objective Force.”**

**We Are Once Again An Army Between The Wars, And Once Again, We Are Challenged To Adjust To Break Old Paradigms. So We Are Transforming To Become Strategically Responsive And Remain Dominant Across The Entire Spectrum Of Military Operations –”**

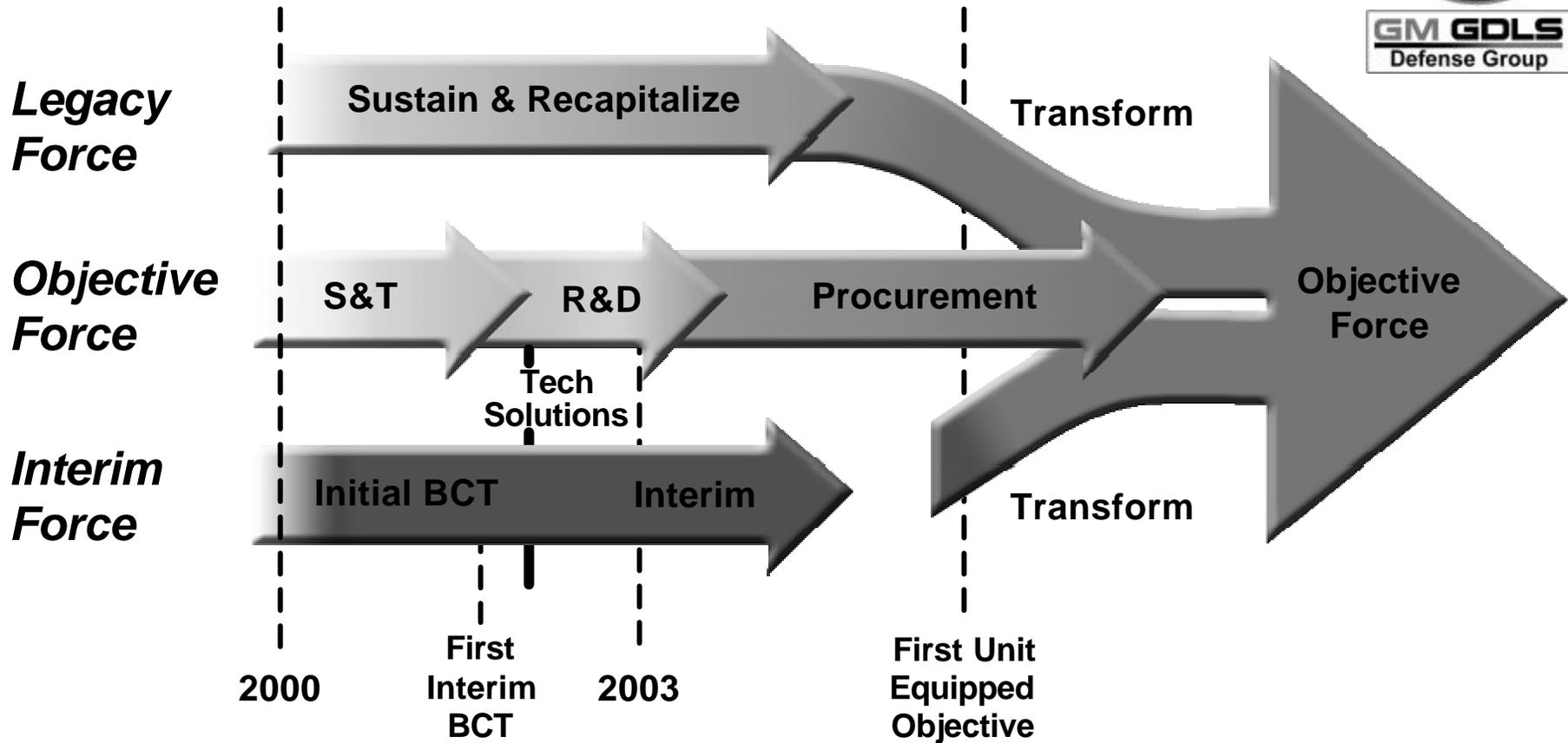
General Eric K. Shinseki  
AUSA Mid-Winter Conference  
Fort Lauderdale, FL 2 March 01

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# The Army Transformation



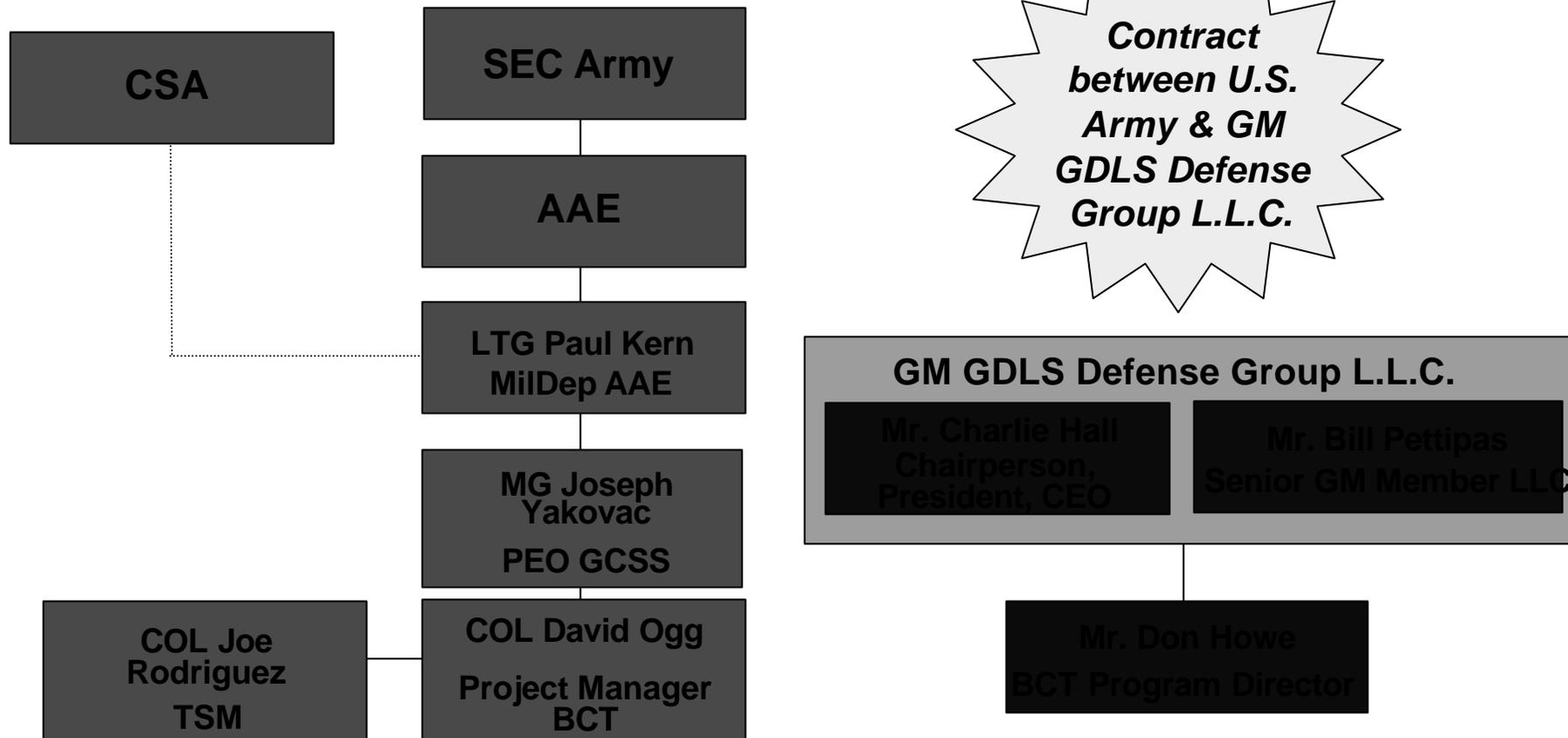
*... Responsive, Deployable, Agile, Versatile, Lethal, Survivable, Sustainable*

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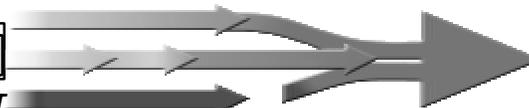
# Organizational Structure GM GDLS Defense Group L.L.C., & ASA(ALT)/PEO/PM



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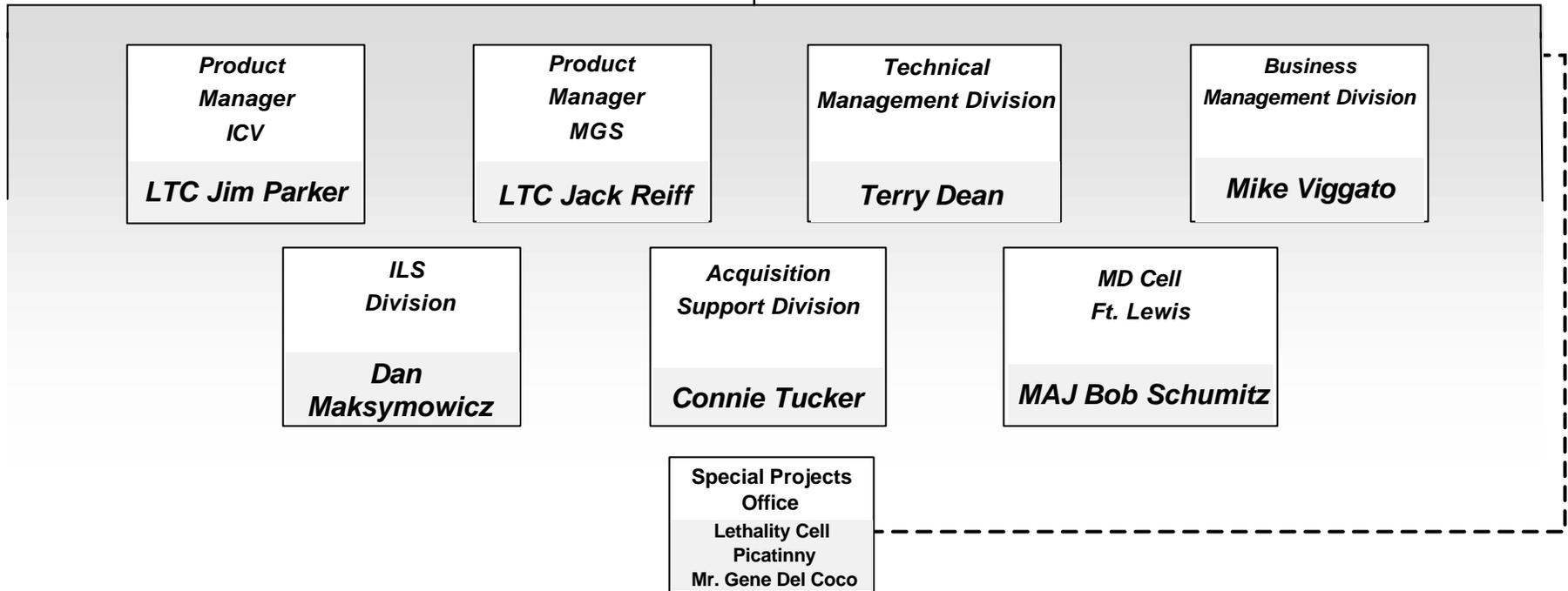
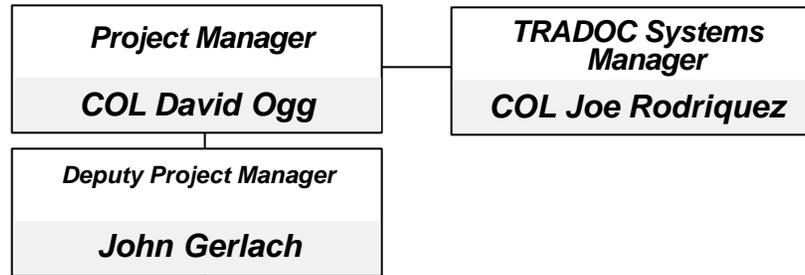


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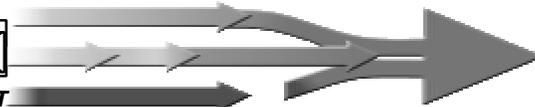
# PM Brigade Combat Team Organization



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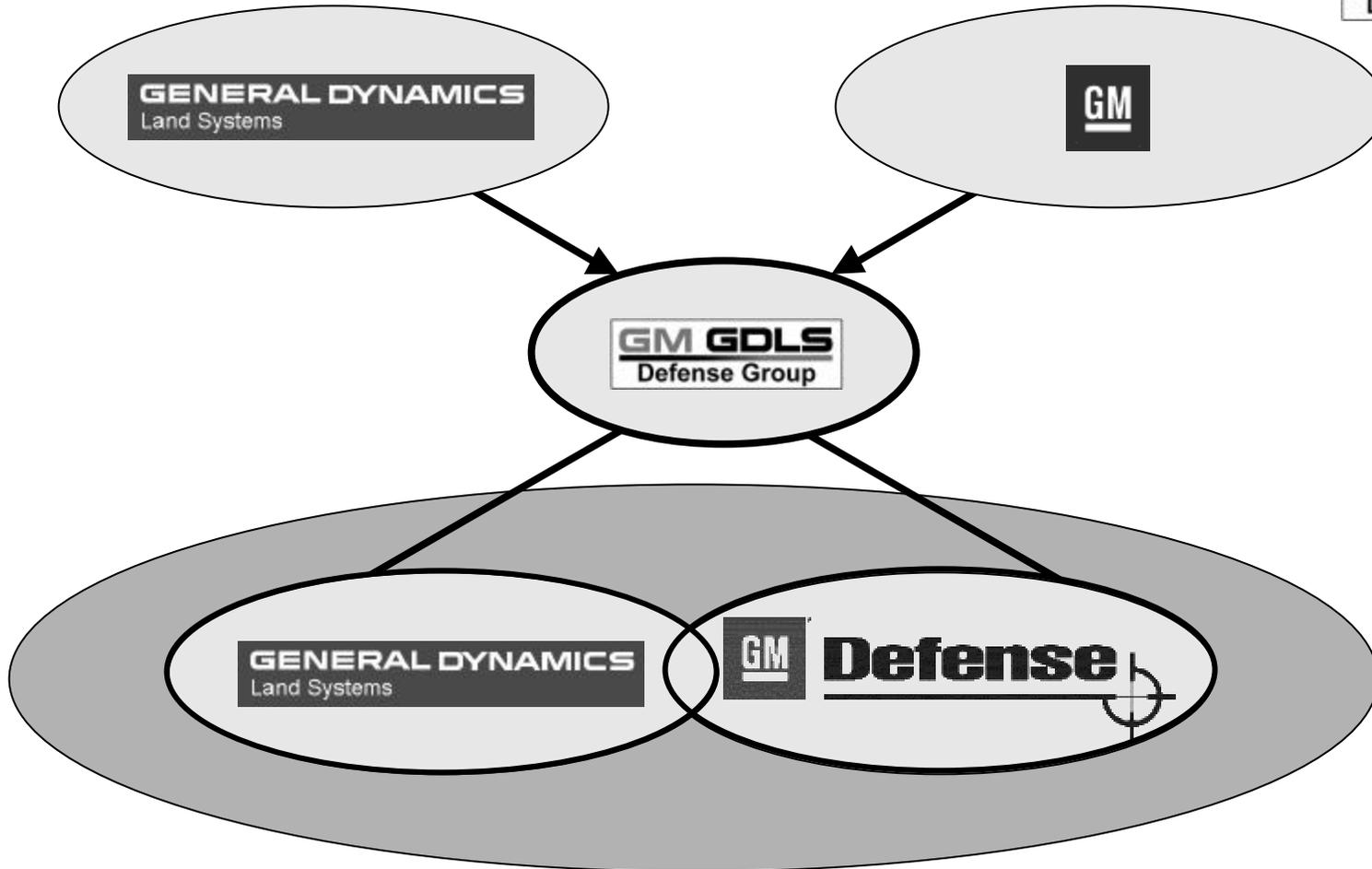


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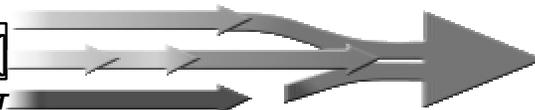
# GM GDLS Team Structure



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# GM GDLS Team



D. Steckle / T. Frey	Engineering
C. Hastie / B. Motala	Materials
D. Minnema / T. Plunkett	Production
B. Drake / L. Meese	Supportability
T. Bento / J. Ebert	Contracts
A. DelBen / S. Young	Finance

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# GM GDLS Work Scope Summary



<u>Veh</u>	<u>Design</u>	<u>Hull</u>	<u>Fab</u>	<u>Assembly</u>	<u>Procurement</u>
		U	L		
MGS	GD	GD	GM	GD	Shared
MC	GD	GD	GM	GD	Shared
NBC	GD	GD	GM	GD	Shared
MEV	GD	GD	GM	GD	Shared
ICV	GM	GD	GM	GDGM	Shared
FSV	GM	GD	GM	GD	Shared
RV	GM	GD	GM	GDGM	Shared
ESV	GM	GD	GM	GD	Shared
ATGM	GM	GD	GM	GD	Shared
CV	GM	GD	GM	GD	Shared
<b>Supportability:</b>		GD		Shared	GM
		Fielding Team		Training	FSR
		Site Management		Provisioning	TMDE
		IETMs		Spares	Equip Spt
				Tech Manuals	

**Delivery Orders to date – 9 (vehicles; nonrecurring; and services)**

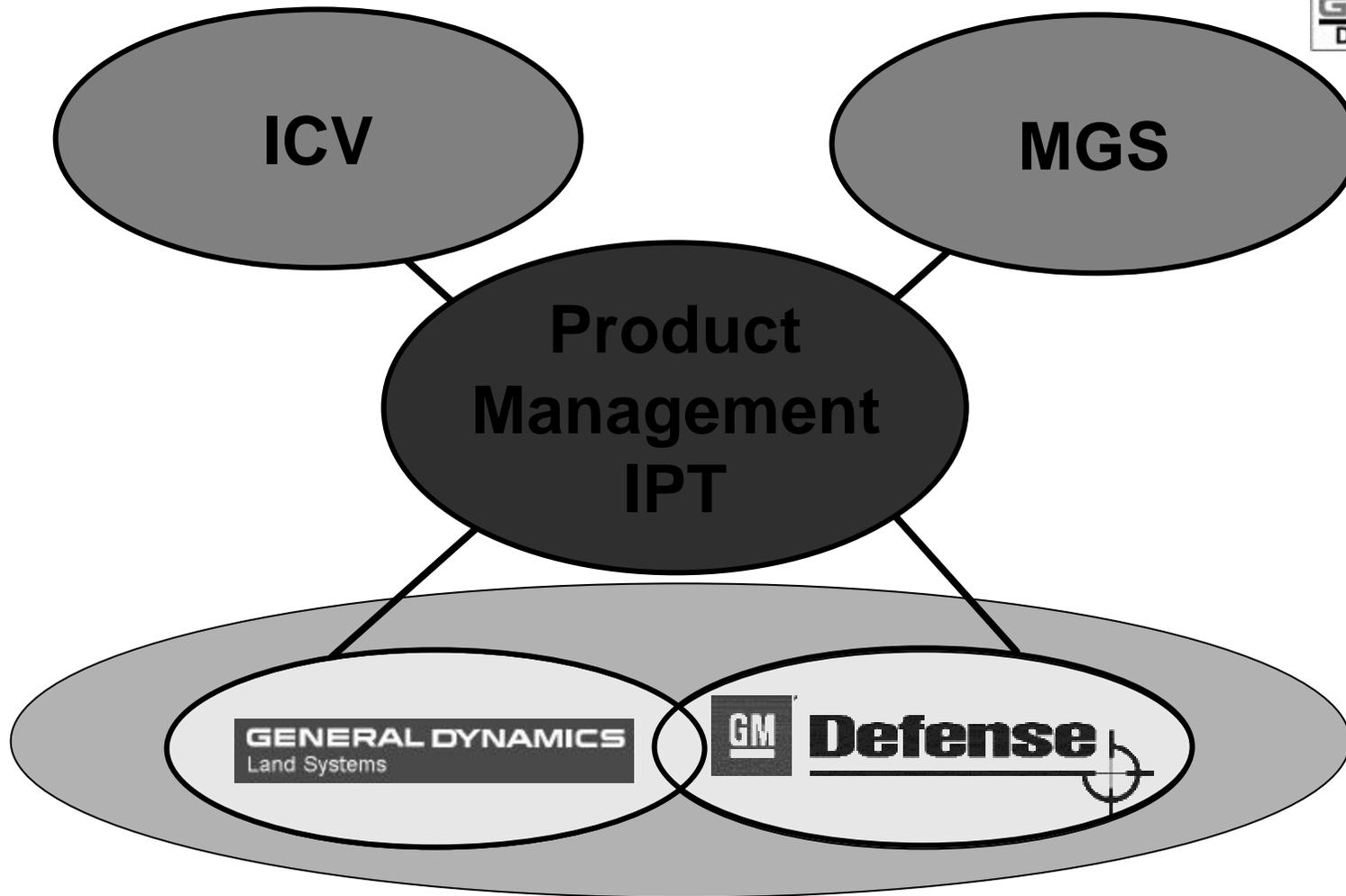
**Total vehicles on order – 413**

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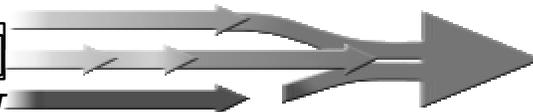




# Product Management IPT

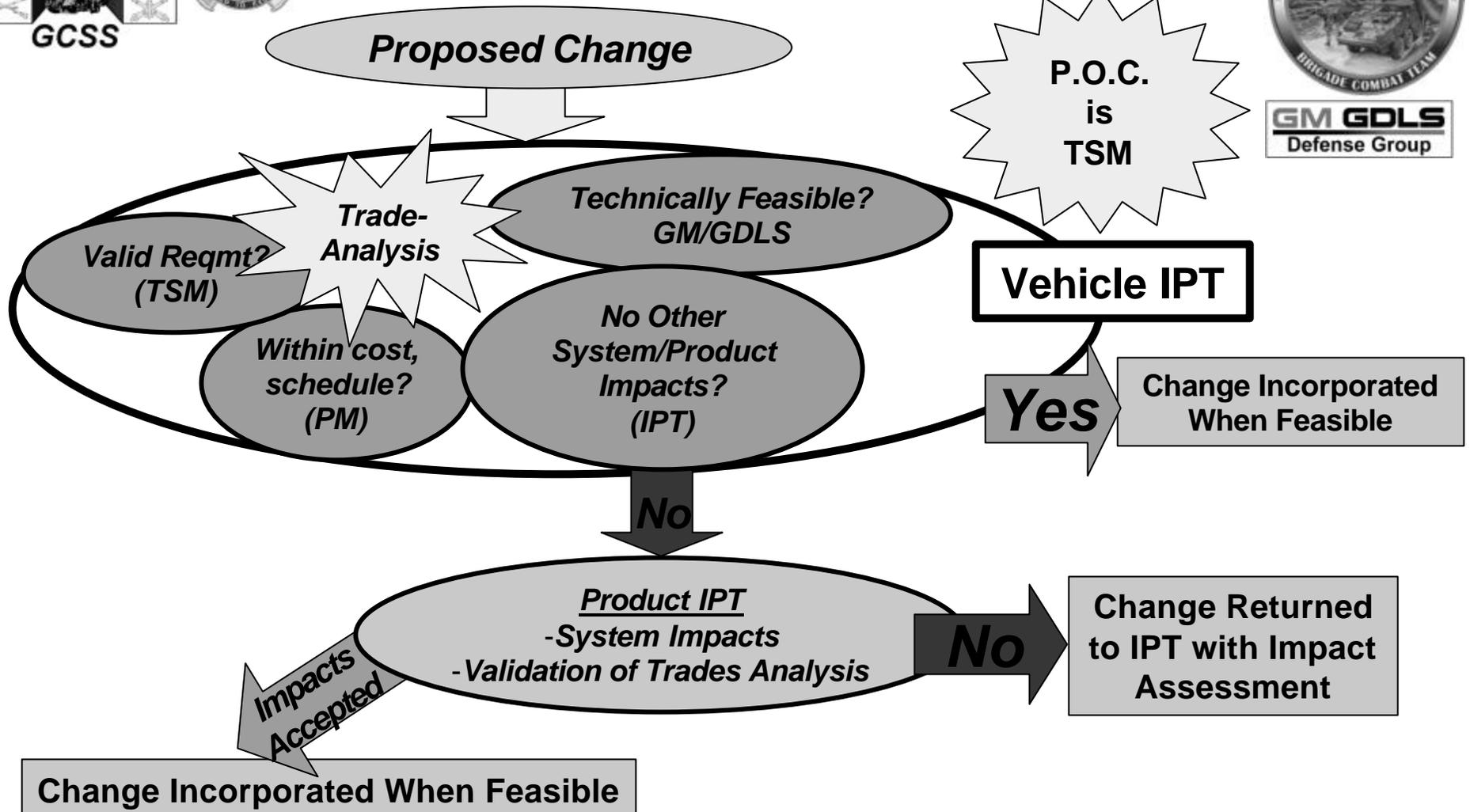


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# User Involvement



Change Incorporated When Feasible

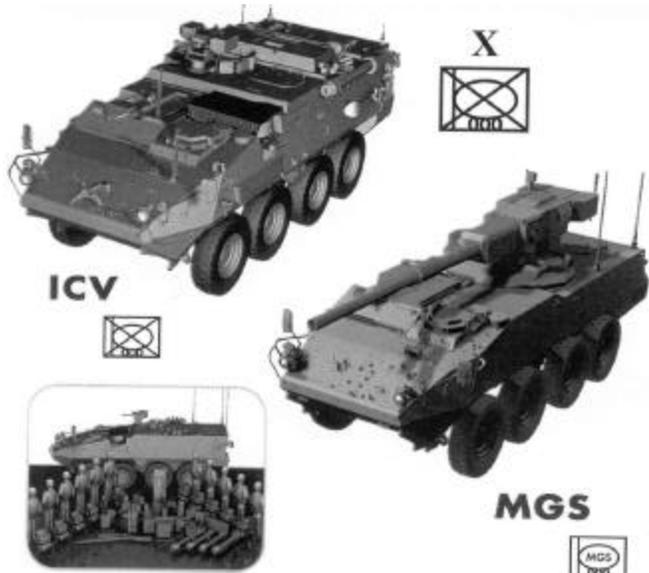
User Input Required to Ensure Vehicles are Suitable and Effective

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# The Interim Armored Vehicle Family



## Infantry Carrier Vehicle (ICV)

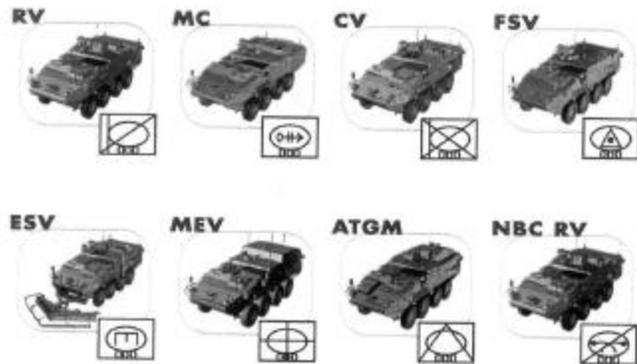
- 8x8 Wheeled w/CTIS & Run Flat
- High Hard Steel Structure
- Remote Weapon Station with cal .50 MG or MK19 40mm

## Mobile Gun System (MGS)

- Low Profile Turret
- M68A1 Cannon w/Autoloader
- Full Solution Fire Control

### Brigade Configuration

	Qty Ea Bde	ORF	TDA	TOTAL
ICV	108	6	30	714
ATGM	9	1	15	75
MORTAR	36	2	13	241
RECON	48	3	12	318
FIRE SUPPORT	13	1	15	99
ENGR SQ VEH	9	1	13	73
CDR'S VEH	39	1	12	252
MED EVAC	17	1	10	118
NBC RECON	3	1	13	37
MGS	27	4	18	204
	309	21	151	
IBCTs	x6	x6		
TOTAL IAV	1854	126	151	2131

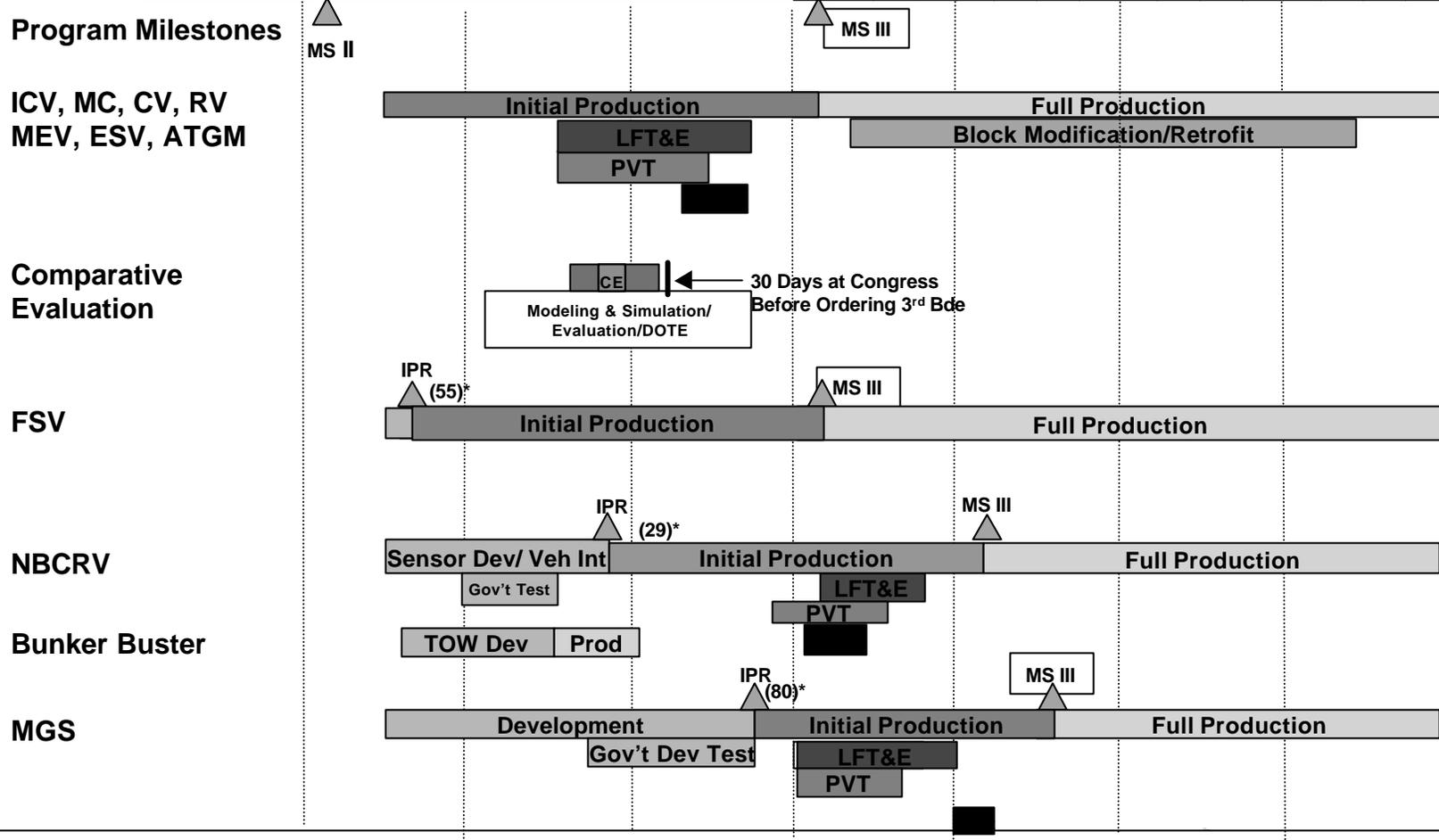




# Integrated Program Summary



CY00	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08
FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08





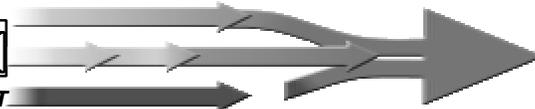
# Design to Delivery



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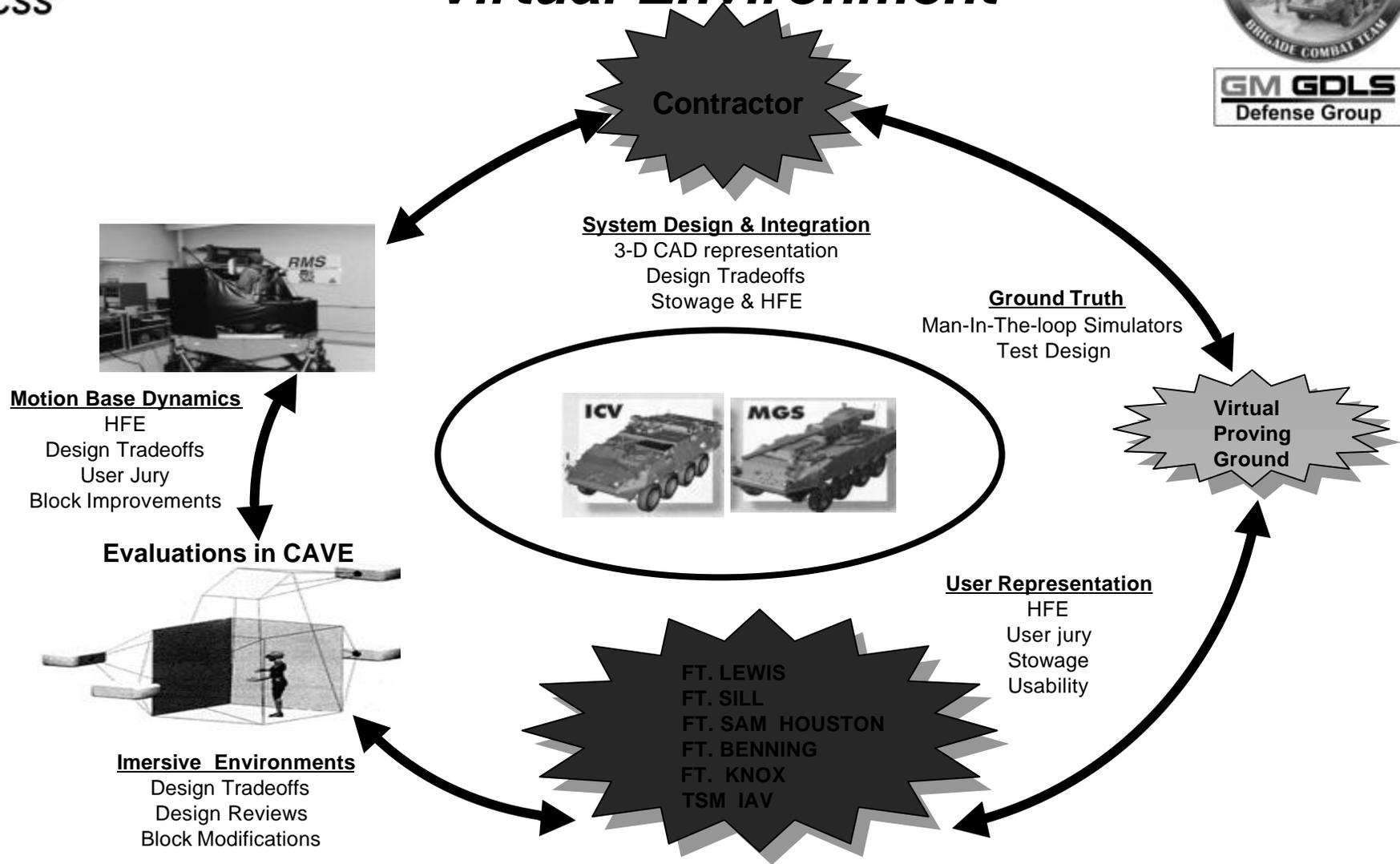


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# Interim Armored Vehicle (IAV) Virtual Environment

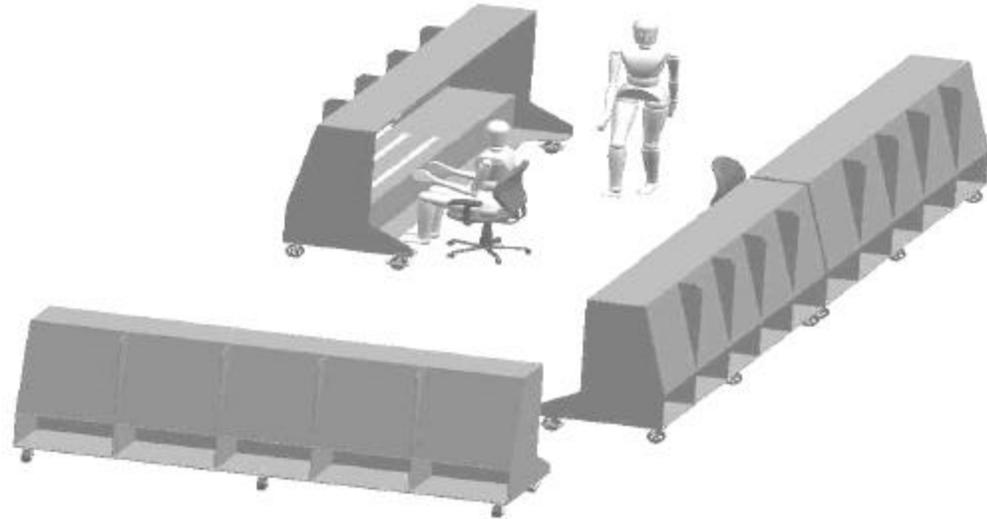


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# ***BCT System Integration Lab (SIL)***



## **Utilization**

- C4ISR subsystem Interoperability**
- Human factors (HFE)**
- Training**
- Documentation (manuals, operator guides)**
- Networking (USG, GM GDLS, Subcontractors, 24/7)**

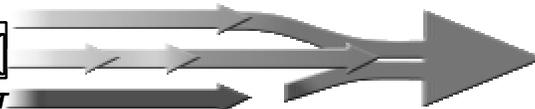
## **Features**

- Mobile**
- Configure for bench testing**
- Rapid variant reconfiguration**
- Full scale environment**

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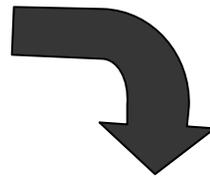




# Fielding at Ft Lewis - Force Modernization Process-



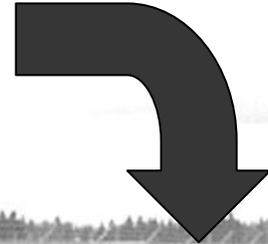
- ID Requirement TOE (TRADOC)
- ID Shortages (I Corp/FORSCOM)



**ALL PARTIES:**  
Maintain Visibility  
Over Entire Process

- Synchronize Fielding (Materiel Directorate-BCC)**
- \* ID fielding window with BDE
  - \* Synchronize PM
  - \* Inform Materiel Developer

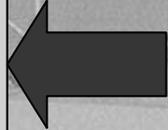
**BATTLE H/O**



**(Facilitate / De-conflict)**

- Execute Fielding (Materiel Developer/PM)**
- \* De-process
  - \* Conduct NET
  - \* Field (hand off & support through NET)
  - \* Hand off TPF packages

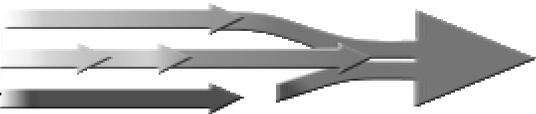
- Coordinate W/Unit (Force Mod/G-7)**
- \* Close coordination W/Unit
  - \* Set up NMIB (G7)
  - \* Coordinate for Resources (G3)



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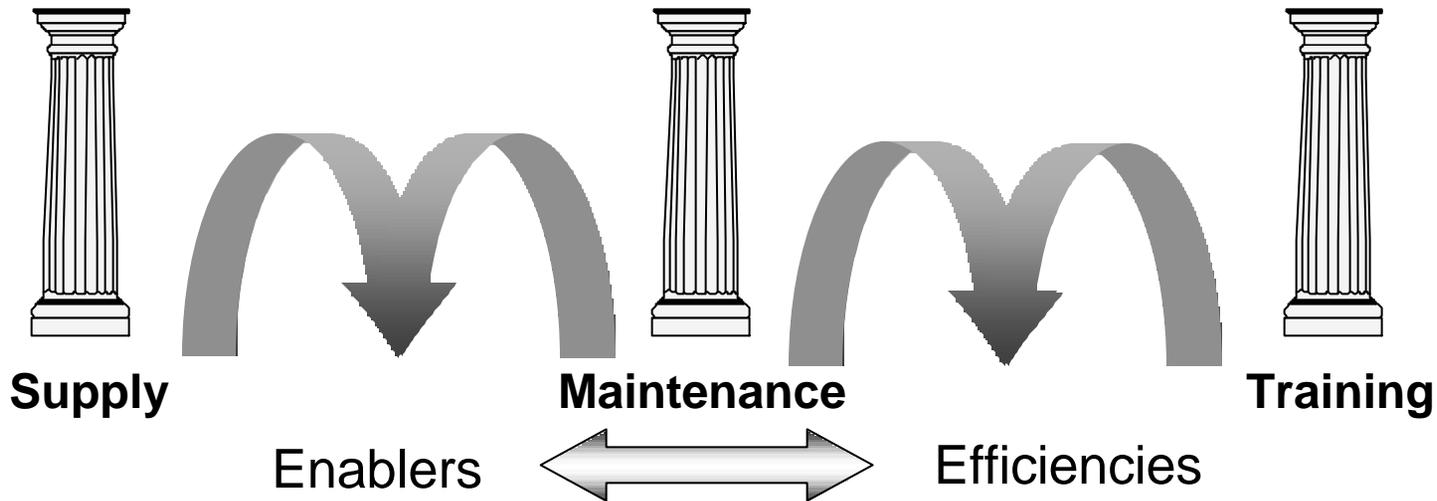




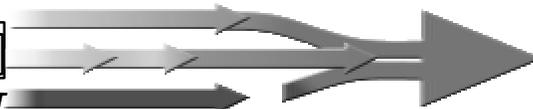
# IAV Supportability & Training Objectives



Use Established Sources for Existing NSNs	Organic Field Level Maintenance with Contractor Field Service Rep Assistance	Instructor & Key Personnel Training New Equipment Training and Institutional Training
CLS for Supply of New NSNs IAW Performance Parameters	CLS for Repair of New LRUs	Training Aids and Devices Interface



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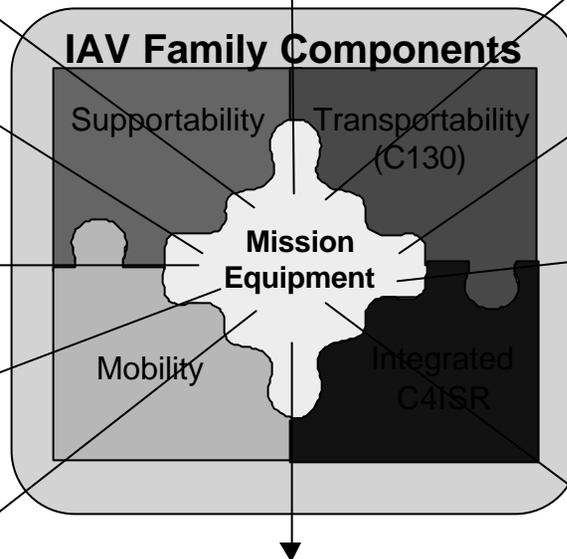


# IAV Common & Integrated Capabilities



## Commonality

- Interoperable with ABCS (KPP)
- C-130 Transportable (KPP)
- IAV Maximum Commonality at System, Subsystem, TMDE, Parts, Tools, Skills And Tasks



## Infantry Carrier Vehicle

- Transports 9-man Infantry Squad + 2-man Crew (KPP)

## Commander's Vehicle

- Provides Commander's C2 Connectivity

## ATGM Vehicle

- TOW 2B Anti-Tank Capability Under Armor

## Reconnaissance Vehicle

- LRAS3 Target Acquisition
- Surveillance for the BDE

## Mortar Carrier

- Dismounted M121 120mm MRT Initially
- Soltam 120mm Recoil MRT Block Mod

## NBC Reconnaissance Vehicle

- Detection of NBC Hazards

## Fire Support Vehicle

- Striker - Coordinated Fire Support Planning and Execution

## Medical Evacuation Vehicle

- 4 Litter Evacuation Capability

## Engineer Squad Vehicle

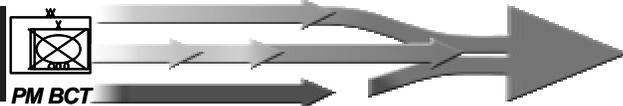
- Transports Engineer Squad & Equipment +2-man Crew
- Mine Neutralization Kit

## Mobile Gun System

- Bunker Busting Capability (KPP)
- Penetrate Reinforced Concrete Wall to Allow Infantry Access
- Provides Direct Fire Support to Dismounted Infantry

Bottom Line: *Mission Equipment Packages Make The Variants Unique*

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# Technical Characteristics Infantry Carrier Vehicle



## Supportability

Embedded IETMs Block Improvement  
Diagnostics Linked To VDT  
BIT/ Power Pack Display

## Mission Capability

Carries 9 Man Infantry Squad And Crew of 2  
Kongsberg Remote Weapon  
Station With M2 .50 cal MG Or MK19  
40mm  
2000 rnds .50 Cal or  
448 rnds 40mm  
2 Javelin Missiles

## Survivability

14.5 mm AP Protection  
High Hard Steel Structure  
MEXAS Ceramic Layer  
Spall Liner  
IBD Passive RPG Add-on

## Transportability

37,798 lbs Combat Weight  
37,618 lbs Transport Weight  
50% Fuel  
200 Rnds .50 Cal  
32 Rnds 40mm  
All remaining Ammo Restowed  
Crew/Squad Gear Restowed

## Mobility

60 MPH Top Speed  
9 Sec 50m Dash  
78 in Gap Crossing  
23 in Vertical Climb  
330 Mile Cruising Range est.  
53 Gal Fuel Capacity

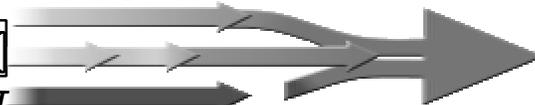
## IAV Common GFE/ASIOE

FBCB2  
EPLRS  
GPS  
TWS-H

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# Infantry Carrier Variant



## ICV Serves as the Baseline Vehicle (Enhanced Commonality)

Key Performance Parameters

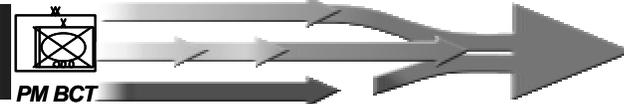
9-Man Squad with their Equipment

C-130 Air Transportable

System Interoperability



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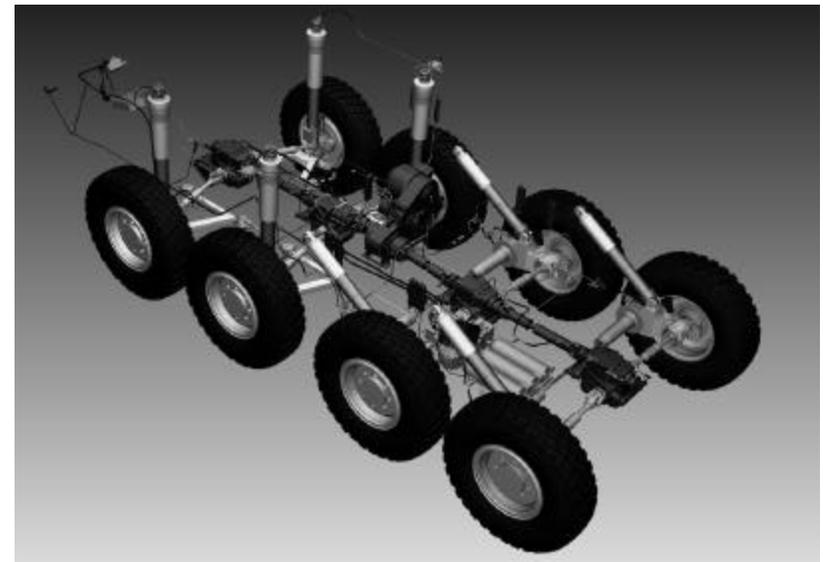




# Automotive



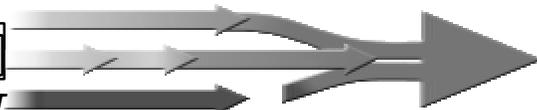
- Sprint Capability - 50 meters in 9 seconds
- Sustained Maximum Speed > 60mph
- Cruise at 40mph for 330+ miles
- 4WD Selectable 8WD
- 2 Speed Transfer Case
- Hydro Pneumatic Suspension
- Height Management System
- Air Transport
- Load Leveling



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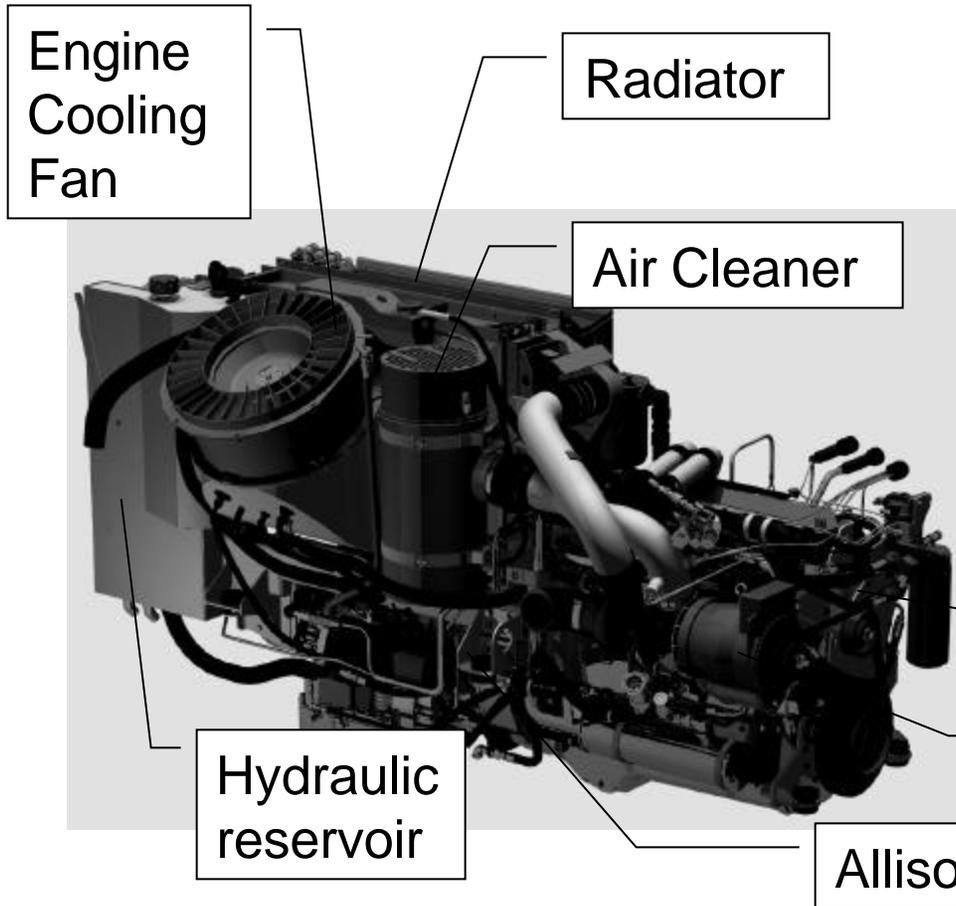


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# Power Train



Caterpillar 3126 engine

- 350 hp @ 2600 rpm
- 820 ft lbs @ 1440 rpm

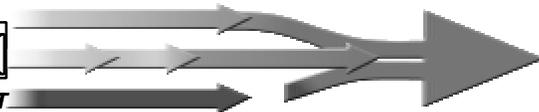
Allison MD3066P Transmission

- 6 speeds fwd
- 1 speed reverse
- 2 x PTO driving hydraulic accessories

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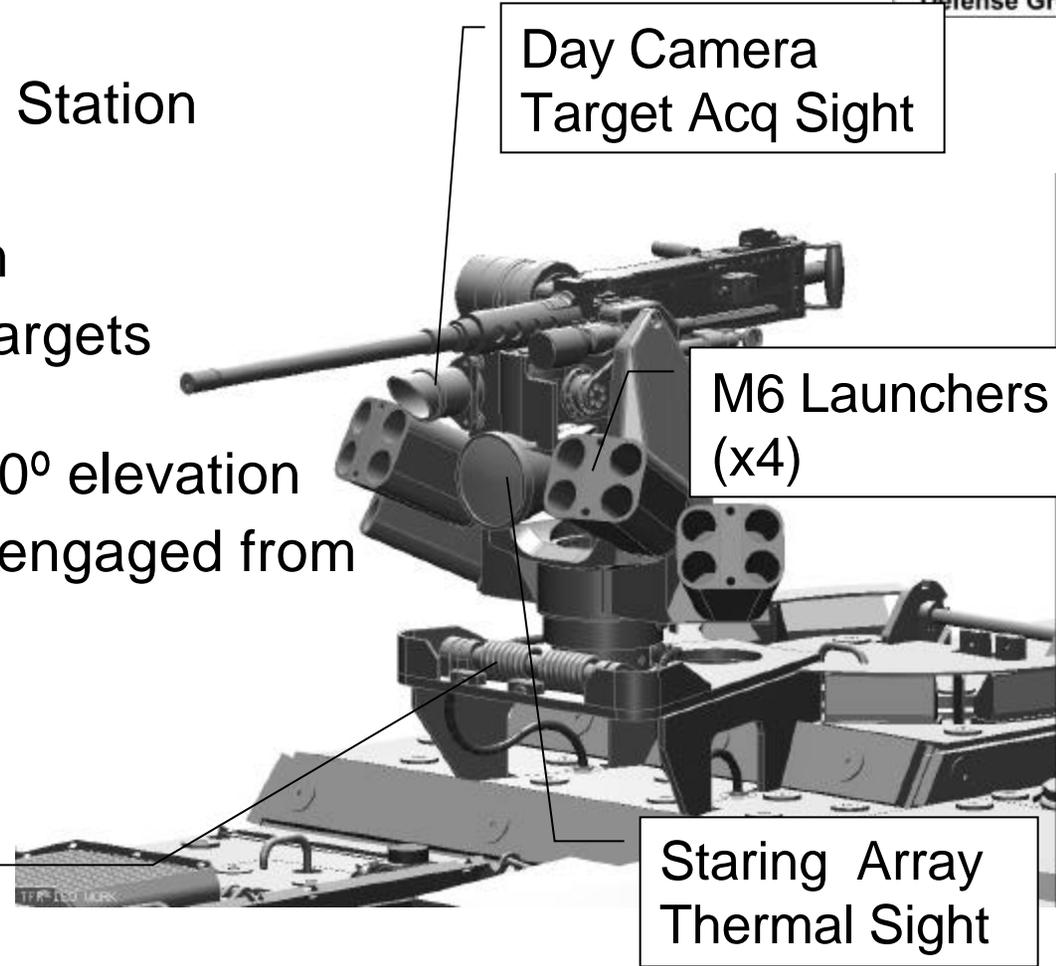


# Armament

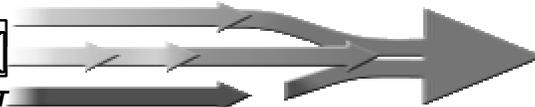
## Remote Weapon System



- KDA Remote Weapon Station
  - M2 .50 cal
  - Mk19 mod 3 40mm
- Defeat light armored targets at 1500m
- -20° depression to + 60° elevation
- Targets acquired and engaged from under armor



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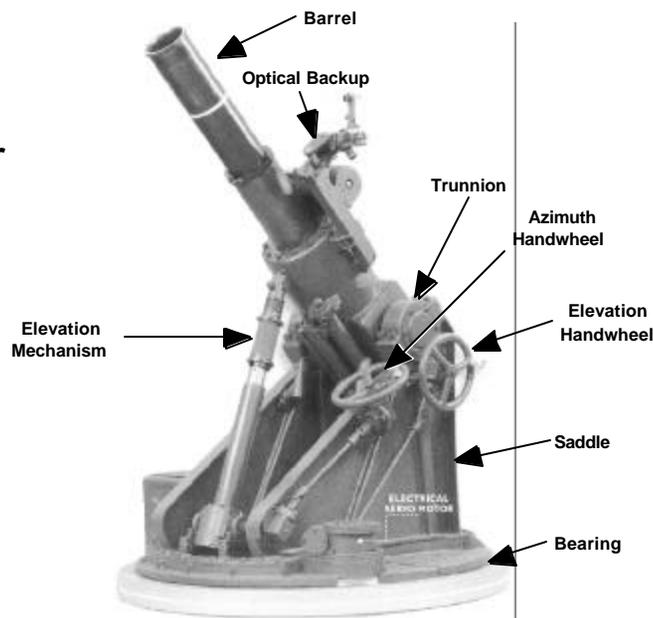


# Armament Mortar Carrier



## MORTAR CARRIER (Initial)

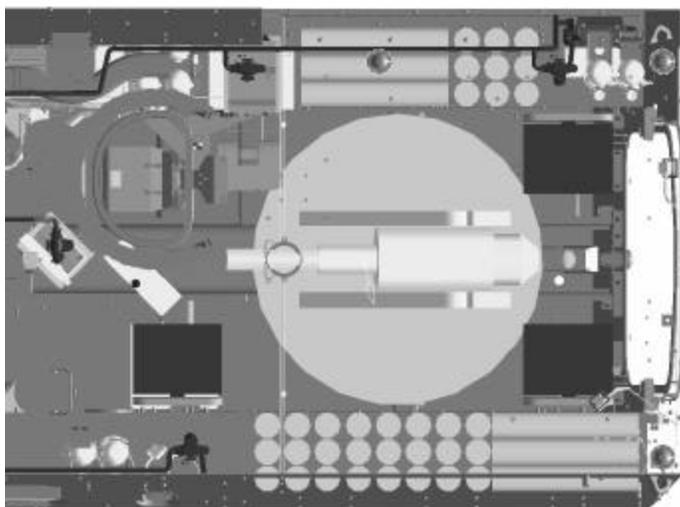
- M121 120mm Dismounted Mortar
- 81mm Dismounted (Battalion)
- 60mm Dismounted (Company)
- Storage for Improved Munitions



BCT-223

## MORTAR CARRIER (Block Improvement)

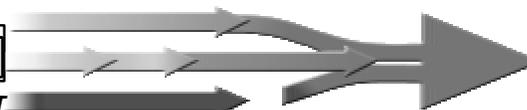
- Soltam 120mm Recoil Mortar System
- 81mm Dismounted (Infantry Battalion Carrier)
- 60mm Dismounted (Infantry Company Carrier)
- XM95 Mortar Fire Control System
- Storage for Improved Munitions



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# Armament

## Anti-Tank Guided Missile



**GM GDLS**  
Defense Group

### ANTI-TANK GUIDED MISSILE VEHICLE

- TOWII
- ITAS (Raytheon) - 2 Missiles
- IBAS Day Camera
- Missile is Remotely Fired Under Armor
- M6 Smoke Grenade Launchers

4 M6 grenade clusters

2 TOW Launcher assemblies  
(Same as Bradley)

Elevating Mast Assembly



\* ATGM does not incorporate the RWS

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# Situational Awareness



## RECONNAISSANCE VEHICLE

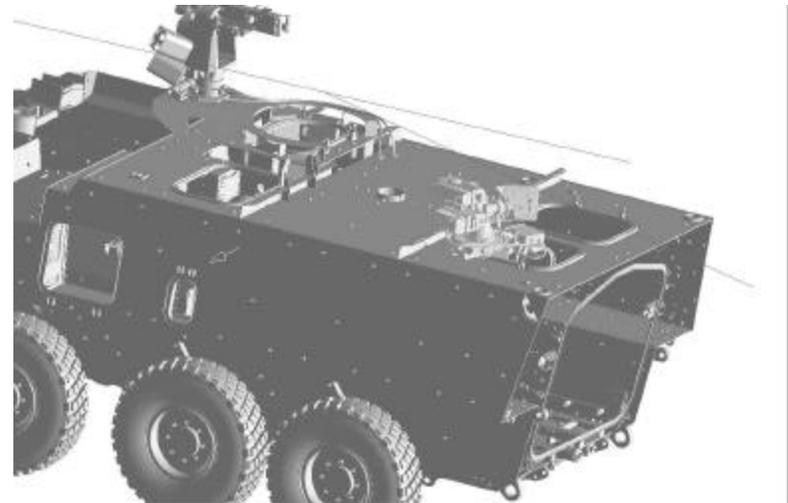
- Integrated LRAS3

## COMMANDER'S VEHICLE

- Full C4ISR Suite including workstations

## FIRE SUPPORT VEHICLE

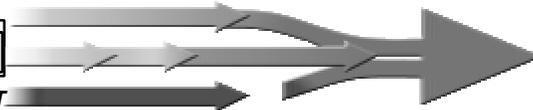
- Integrated M707 Striker
- Mounting position allows growth to Striker Sabre / masted system



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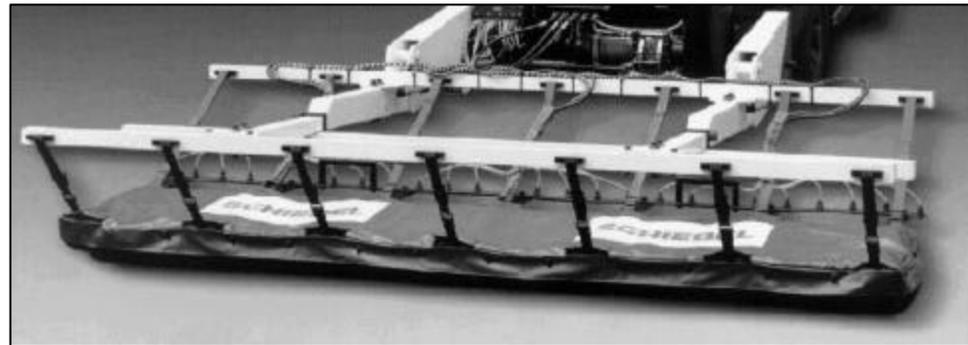
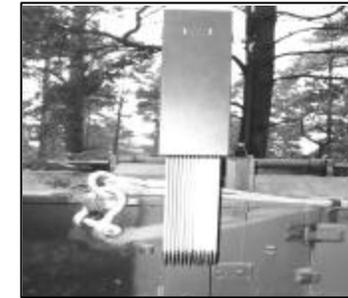
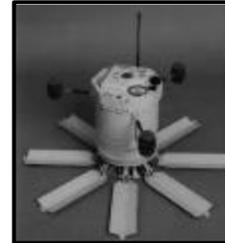


# Support Elements

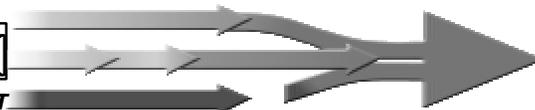


## ENGINEER SUPPORT VEHICLE

- Vehicle Array Mine Detection System (VAMIDS)
- Tele-Operation, Mark IV Robotic System (Omnitech)
- Advanced Hornet System
- Obstacle Neutralization System
  - Magnetic Signature Duplicator
  - Pearson Surface Mine Plow
  - Light Weight Mine Roller
  - Lane Marking System
- M15/M21 Anti-tank Mines



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# Support Elements

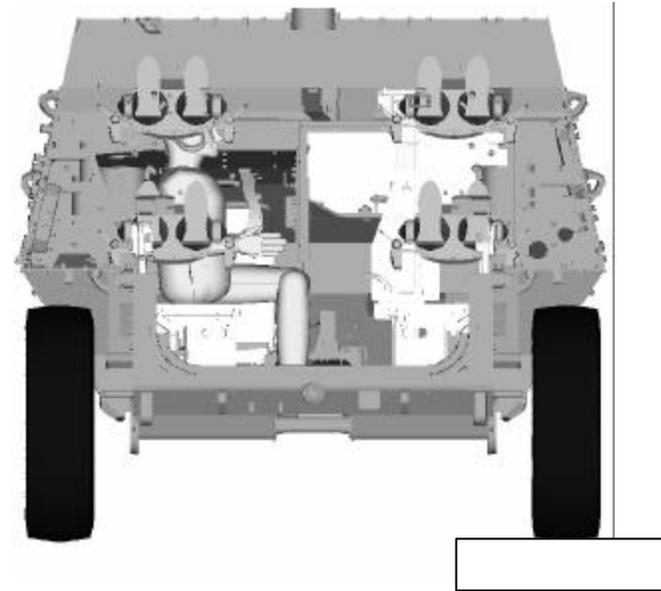


## NBC RECONNAISSANCE VEHICLE

- Overpressure and Climate Control System
- Government Directed, CACI Developed Digital Suite and Sensors
- Lightweight Chemical Agent Detector and Display
- Radiation Detector(s) AN/VDR-2 and AN/VDR-13
- Autonomous Navigational Device

## MEDICAL EVACUATION VEHICLE

- Litters for four patients
- Seating for six ambulatory patients



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# Technical Characteristics Mobile Gun System



**GDLS**  
Group



## Supportability

IETMs on Video Display Terminal (VDT) For 3/2 ID and 1/25 ID  
Embedded IETMs Block Improvement  
Diagnostics Linked To VDT  
BIT/BITE Power Pack Display

## Mission Capability

Low Profile Turret  
M68A1 Cannon w/Autoloader  
Coax 7.62mm, Secondary CDR's MG  
Full Solution Fire Control,  
2 Axis Stabilization  
18 rnds 105mm  
4200 rnds 7.62mm

## Survivability

14.5 mm AP Protection  
High Hard Steel Structure  
MEXAS Ceramic Layer  
Kevlar Spall Liner  
IBD Passive RPG Add-on

## Transportability

41,300 lbs Combat Weight  
38,000 lbs Transport Weight  
25% Fuel  
5 rnds 105mm  
500 rnds 7.62mm  
200 rnds .50 cal  
All remaining Ammo Removed  
Crew Gear Restowed  
Winch Removed

## Mobility

60 MPH Top Speed  
9 Sec 50m Dash  
78 in Gap Crossing  
23 in Vertical Climb  
330 Mile Cruising Range  
53 Gal Fuel Capacity

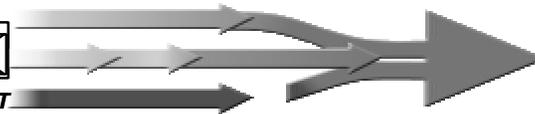
## MGS Specific GFE/ASIOE

M68A1  
ELRF

**Vanguard For Army Transformation**



PM BCT



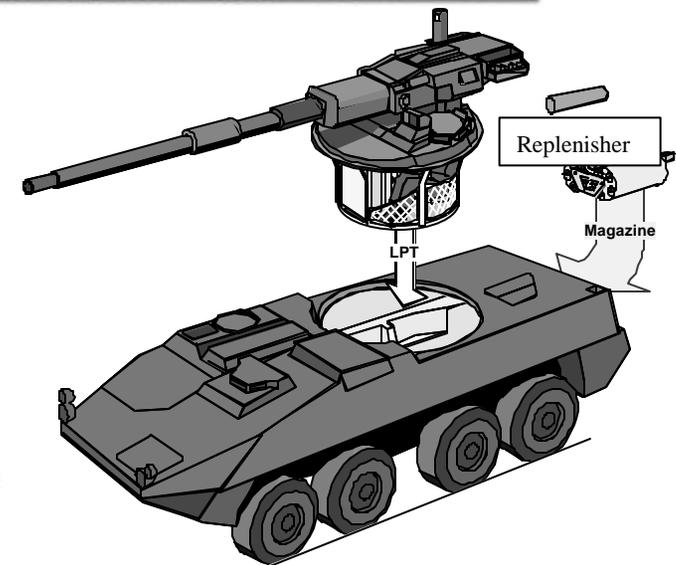


# Mobile Gun System Variant



GM GDLS  
Defense Group

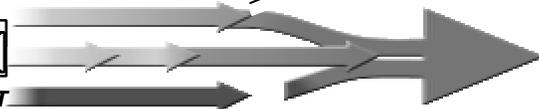
- Low Profile Turret
  - External Modified M68 105mm gun
  - Protected 8 round autoloader
  - Versatile lethality with growth
  - Stabilized direct fire control
  - Low profile, side-by-side crew
- ICV Variant Chassis
  - Modified production chassis
  - Lowered for C130/survivability
  - Isolated 10 round replenisher low in back
- MGS Vehicle
  - 18 auto loaded rounds
  - 3 crew
  - GVW/performance ~same as ICV
  - LPT on LAV III demonstrated performance



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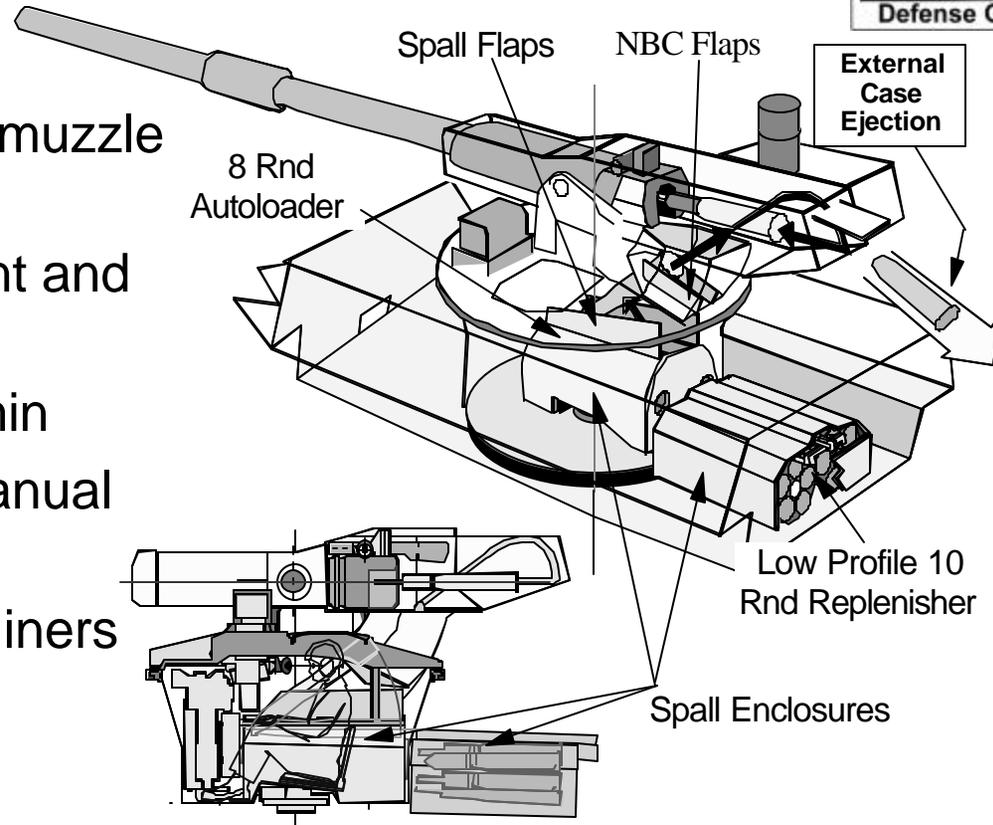


# MGS LPT Weapon Lethality



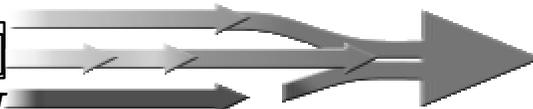
**GM GDLS**  
Defense Group

- M68A1 105mm cannon with muzzle brake
- Fires all NATO ammo present and future
- 8-round autoloader, 10 rds/min
- 10-round replenisher with manual bypass
- All ammo protected by spall liners



**Fully Automated, Protected, MBT Firepower**

**Vanguard For Army Transformation**

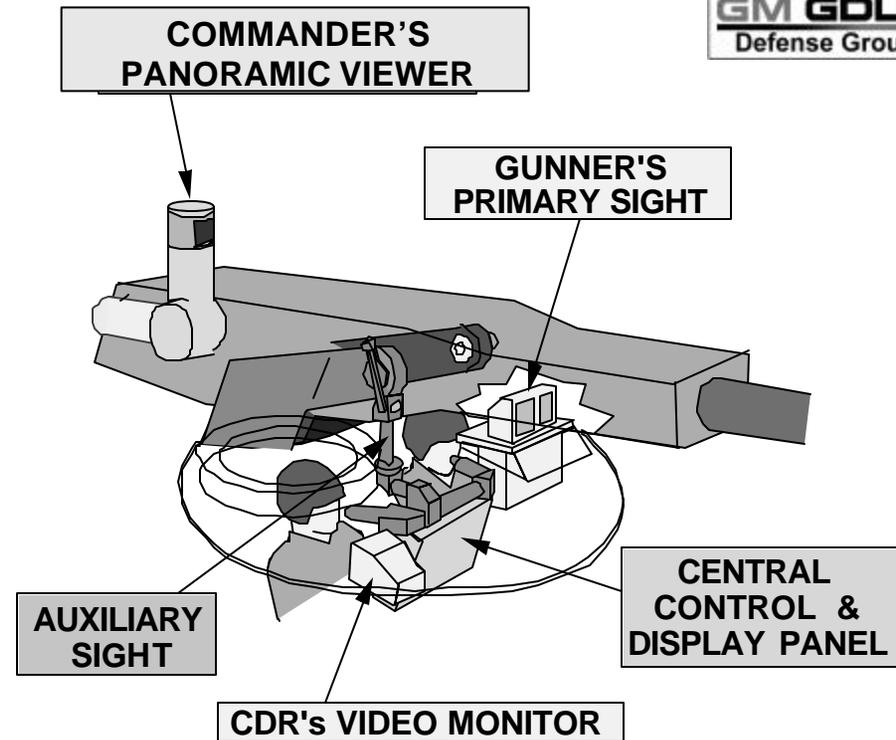




# MGS LPT Fire Control



- 2 axis stabilized gunner's sight
  - Latest thermal technology
  - 2 power viewing
  - Eye safe laser range finder
  - Muzzle reference sensor
- Turret and gun stabilized
- 7x auxiliary sight
  - Available to both crewmen
- Panoramic viewer
  - Mounts high on gun pod
  - Day video and thermal

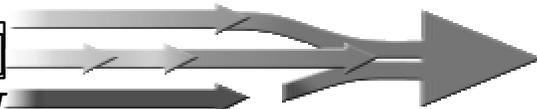


**State-Of-The-Art Fire Control**

**Vanguard For Army Transformation**



PM BCT





**GM GDLS**  
Defense Group

END OF PRESENTATION