

EQUIPPING THE WARFIGHTER TO WIN

## MAGTF C2, Weapons and Sensors Development and Integration (MC2I)

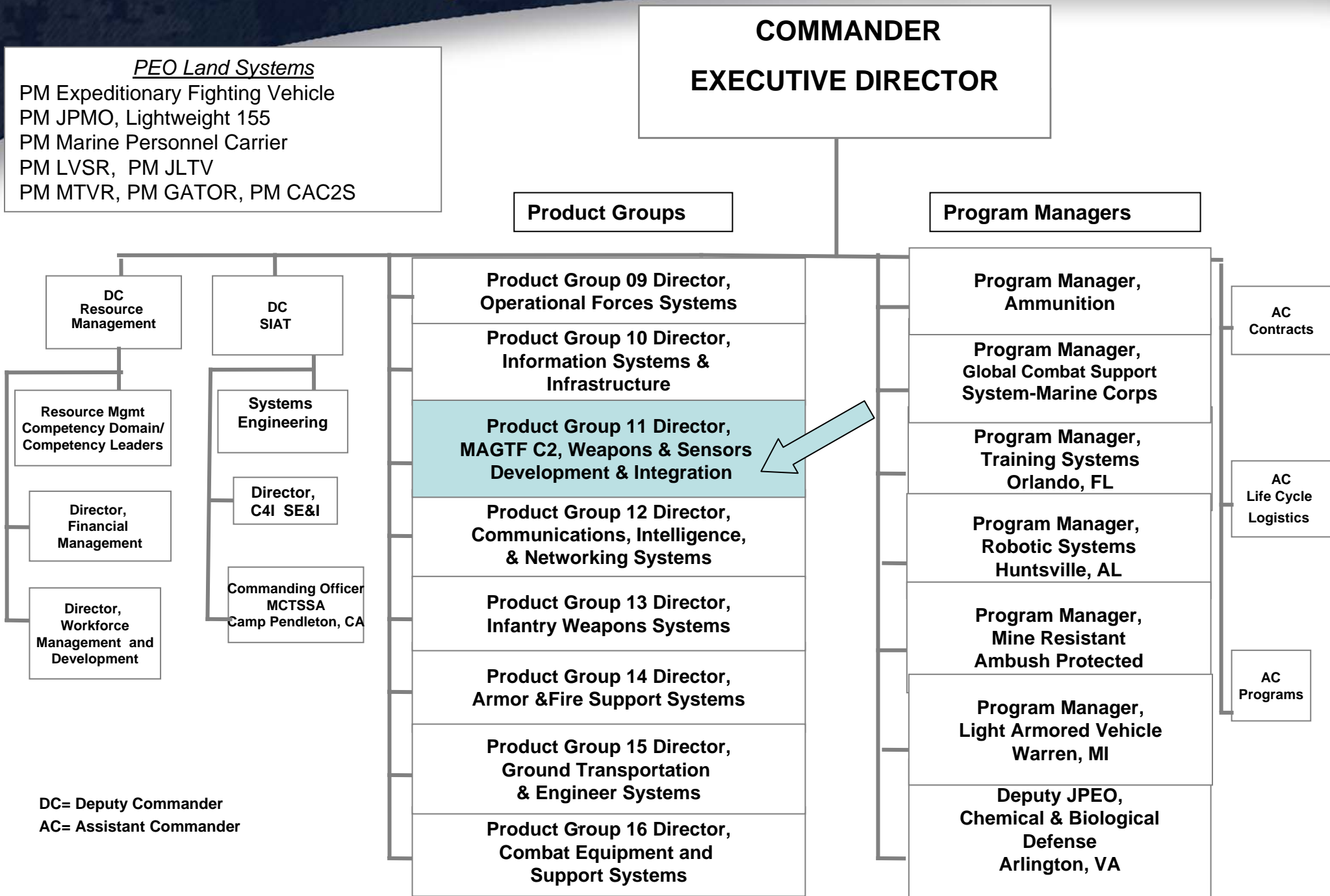


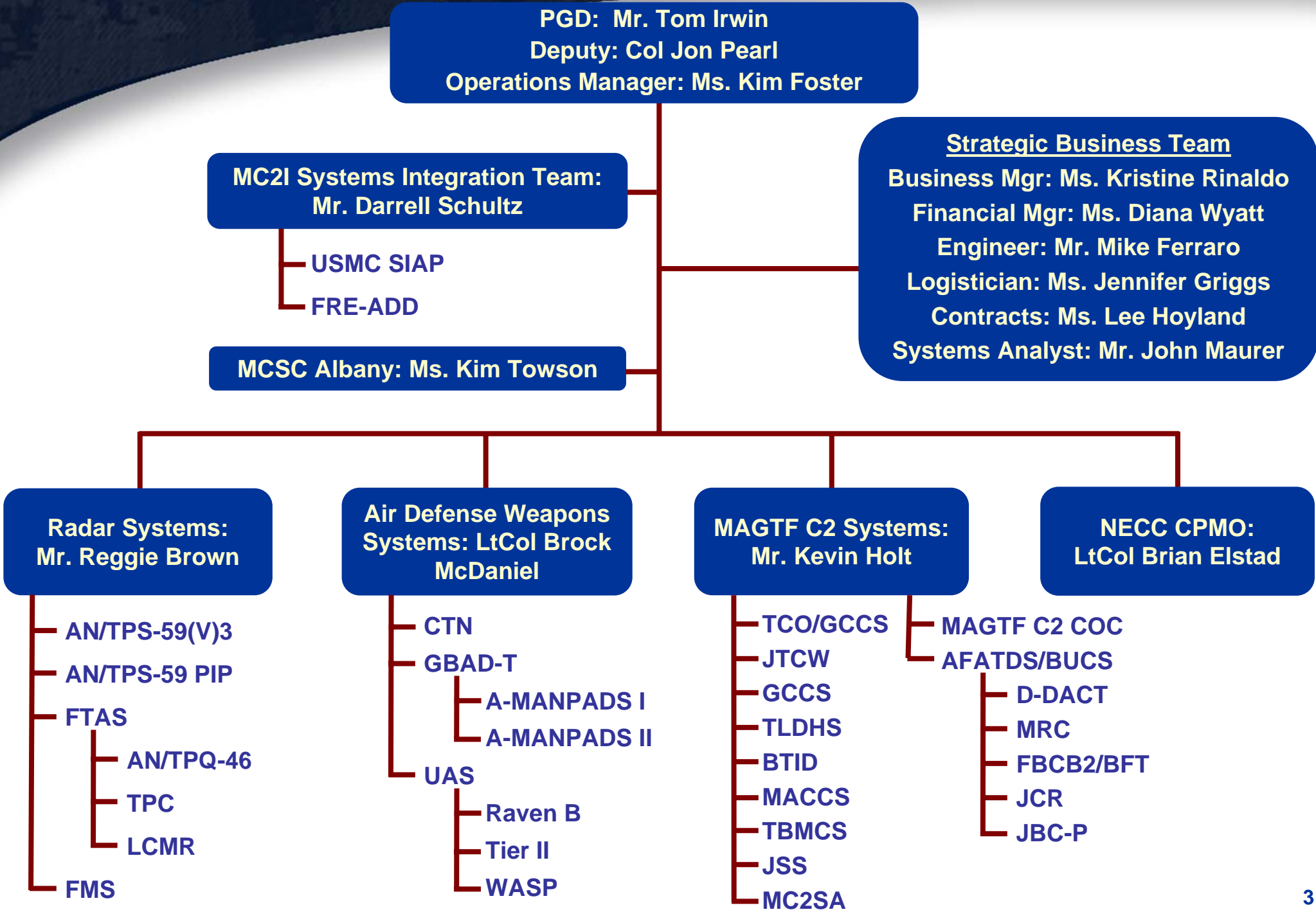
**Mr. Tom Irwin**  
**Product Group Director, PG-11**

























Where we are located!









	FY08	FY09	FY10	FY11	FY12	FY13	
<b>Radar Systems</b>	RDT&E PMC	\$5.8M \$129.7M	\$17.5M \$15.0M	\$17.4M \$9.5M	\$24.8M \$10.2M	\$25.9M \$5.2M	\$28.3M \$5.3M
		TPS-59 SPDP Upgrade 		Antenna PIP 			
				FTAS – LCMR, TPC, TPQ-46 Fielding & Sustainment			
<b>MAGTF C2 Systems</b>	RDT&E PMC	\$50.8M \$204.4M	\$71.4M \$113.2M	\$48.1M \$156.0M	\$41.5M \$114.6M	\$45.0M \$95.3M	\$44.0M \$105.6M
		MAGTF C2 COC 2010 		MAGTF C2 COC 2012 		MAGTF C2 COC 	
		JTCW/GCCS/TCO 		NECC 		NECC 	
		MRC 	BFT – JCR 	JCTI 	JBC-P 		
<b>Air Defense Weapons Systems</b>	RDT&E PMC	\$11.8M \$25.5M	\$18.9M \$47.5M	\$14.1M \$59.6M	\$9.9M \$46.6M	\$7.9M \$39.8M	\$5.9M \$34.6M
				Raven B SURSS / WASP Fielding & Sustainment			
		A-MANPADS INC 1 		Weapon Replacement 			
			CTN Fielding & Sustainment 				



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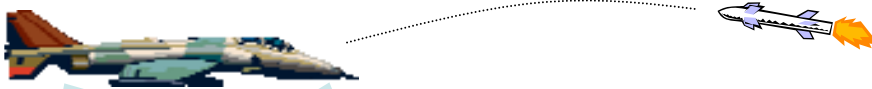
## MAGTF C2 Vision:

Marine Air-Ground Task Force Command and Control (MAGTF C2) enhances lethality and effectiveness across the range of military operations through better decision making and shared understanding.





**Representative Air Defense Engagement String, 2010**



**Advanced Man-Portable  
Air Defense System  
(AMANPADS)**



**AN/TPS-59(V)3**



**AN/TPS-59(V)3**



**Composite Tracking  
Network (CTN)**



**Aviation  
C2 Node**



**Composite Tracking  
Network (CTN)**



### Representative Ground Fires Engagement String, 2010

Raven B Small Unit Remote Scouting System



Aviation C2 Node  
• TBMCS  
• JTCW

Target Location, Designation and Handoff System (TLDHS)

JCTI



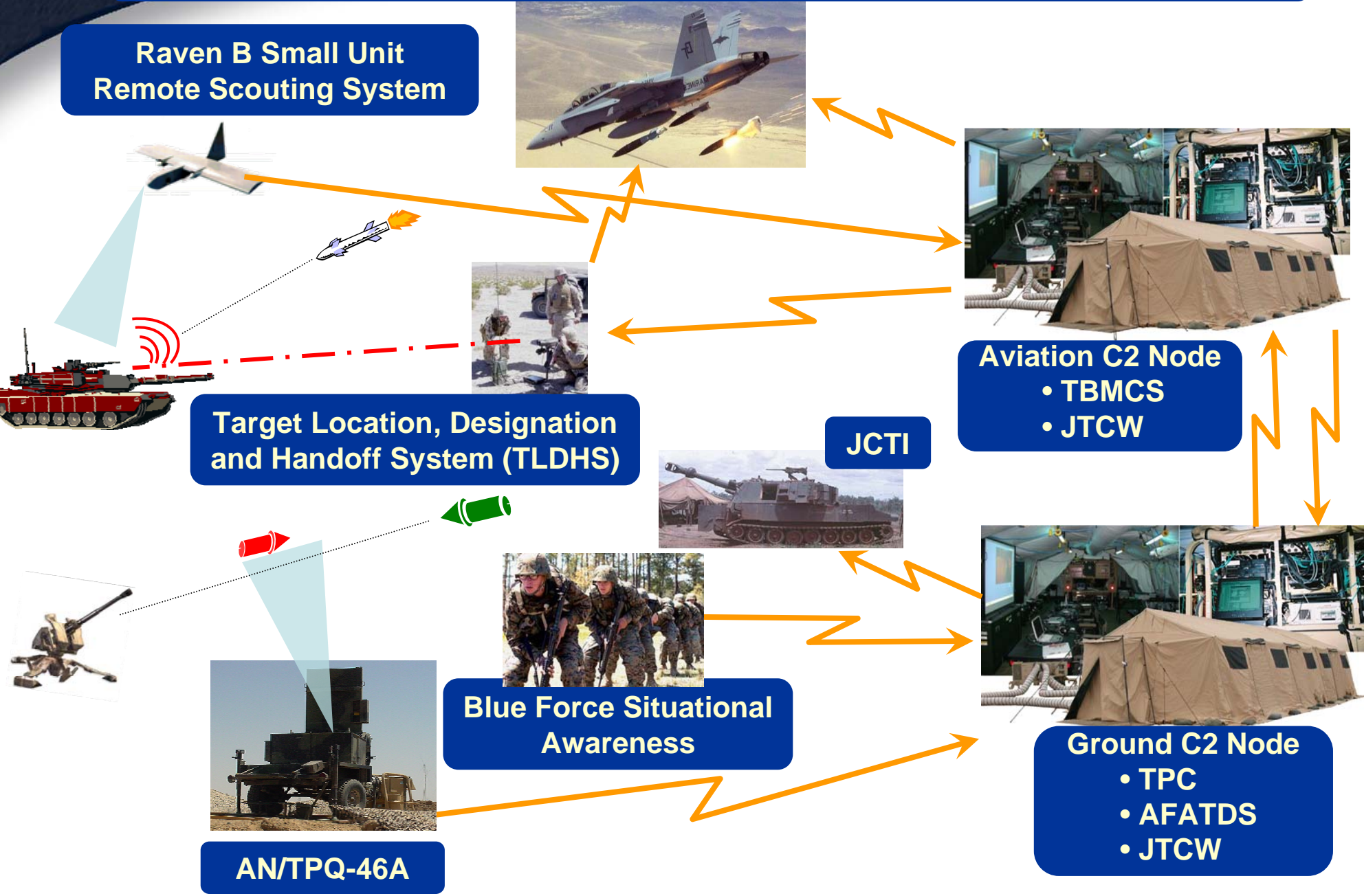
Blue Force Situational Awareness



Ground C2 Node  
• TPC  
• AFATDS  
• JTCW



AN/TPQ-46A





### Many Challenges Remain:

- Net-centricity, the service-oriented environment and the transition to NECC
- USMC / USA JROC-directed convergence
- Combat ID
- Common, Modular, Scaleable
- Integrating C2 technologies to improved existing capabilities
- Footprint reduction
- Reducing time to fuse multi-level data at and from the Air Combat Element (ACE), Ground Combat Element (GCE), Command Element (CE), and Combat Systems Support Element (CSSE)





- Introduce the next speaker:

Mr. Kevin Holt, PM MAGTF Command and Control (C2) Systems





### PM MAGTF C2 Systems Mr. Kevin Holt

Description: Responsible for the cost, schedule, and performance associated with the acquisition of USMC Command and Control (C2) and Situational Awareness projects; to include sustainment and improvement initiatives.

### Portfolio:

- MAGTF C2 Systems Applications – Integration of capabilities (intelligence, logistics, fires, NBC, and aviation), the implementation of a Service Oriented Environment and Net Enabled Command Capability (NECC).



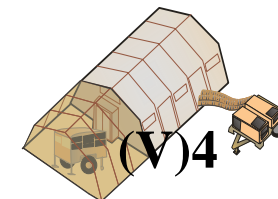
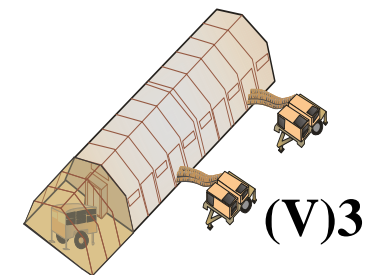
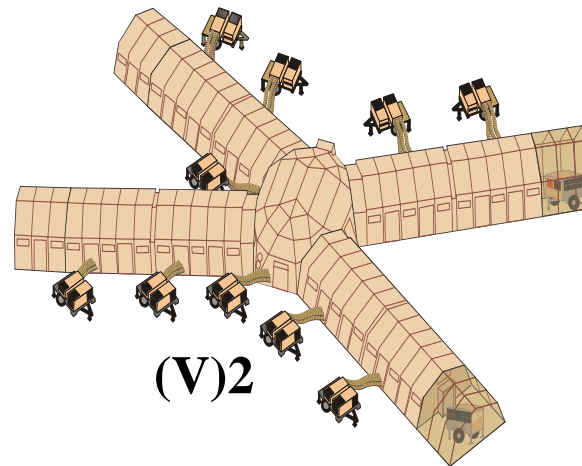




## PM MAGTF C2 Systems Mr. Kevin Holt

### Portfolio (continued):

- Combat Operations Center (COC) – MEF through Company - Hardware solution for MAGTF C2 COC from MEF to Battalion complete fielding in FY10, studying approach for Company Capability Set.





#### PM MAGTF C2 Systems Mr. Kevin Holt

### Portfolio (continued):

- Ground Command and Control – Support transition to NECC, support STRIKELINK, AFATDS supporting Battery Mobile Tactical Shelter fielding efforts in FY08 & FY09.
- Blue Force Situational Awareness - Joint Capability Release (JCR) testing on-going; working with the Army for a Dismounted DACT replacement.





## PM MAGTF C2 Systems Mr. Kevin Holt

### Portfolio (continued):

- Aviation Command and Control – Sustaining legacy systems; Theater Battle Management Core System (TBMCS) supporting NECC efforts, Joint Interface Control Office Support System (JSS) supporting testing and integration effort.







## Near-Term Program Initiatives

- Development and integration of MAGTF C2 COC Capability Block 2010
- Convergent efforts with the Army
- Align/assess US Army C2 Systems modernization efforts USMC MAGTF C2 development
- Support transition to NECC



## Future Program Initiatives

### R&D Investment

- SOA enabling technologies
- Data management strategies and technologies
- Implementation of mandated standards i.e. IPV-6

### PMC Investment

- Upgrade/evolve hardware solutions for new capabilities

### O&MMC Investment

- Configuration management of architectures, services, applications, and data



- Introduce the next speaker:  
**Mr. Reggie Brown, PM Radar Systems**



# MAGTF C2, Weapons & Sensors Development and Integration (MC2I)

## PG11

### Program Manager, Radar Systems

### Program Manager: Mr. Reggie Brown





## PM Radar Systems Mr. Reggie Brown

Description: Responsible for technical and business requirements associated with USMC Sensor programs; to include sustainment and improvement initiatives.

### Program Manager, Radar Systems

#### Portfolio:

- AN/TPS-59(V)3 Radar System
- AN/TPQ-46 Radar System
- Foreign Military Sales

#### AN/TPS-59 Product Improvement Program (PIP)

- Two phased effort meet the capabilities of the Three Dimensional Expeditionary Long Range Radar (3DELRR) Capabilities Development Document (CDD)
  - Milestone B – First Quarter FY10
  - IOC Phase I (replace current antenna) – FY14
  - FOC Phase II (full 3DELRR capability) – FY22
- Soliciting help from industry to craft strategy to develop new antenna to operate with AN/TPS-59(V)3 while enabling upgrade to full 3DELRR capabilities.

#### AN/TPQ-46 Radar System

- Procuring 22 additional systems for the MARCENT EDL and 202K Initiative /TPQ-46 Radar System

#### Foreign Military Sales Activities

- Bahrain: TPS-59(V)3B, and C2 capability
- Egypt: TPS-59(V)3E, SPS-48E Radar, GETS-1000 ATS
- Kuwait: 71M Aerostat w/ATLASS Radar (Variant of TPS-63ss)



## PM Radar Systems Mr. Reggie Brown

### Near-Term Program Initiatives

- Complete Technology Refresh of AN/TPS-59(V)3 Data Processing Group (DPG) electronics
- Obtain Milestone B decision for AN/TPS-59 Product Improvement Program (PIP)
- Continue Risk Mitigation efforts to obtain Technology Readiness Level (TRL) 6 for AN/TPS-59 PIP





## PM Radar Systems Mr. Reggie Brown

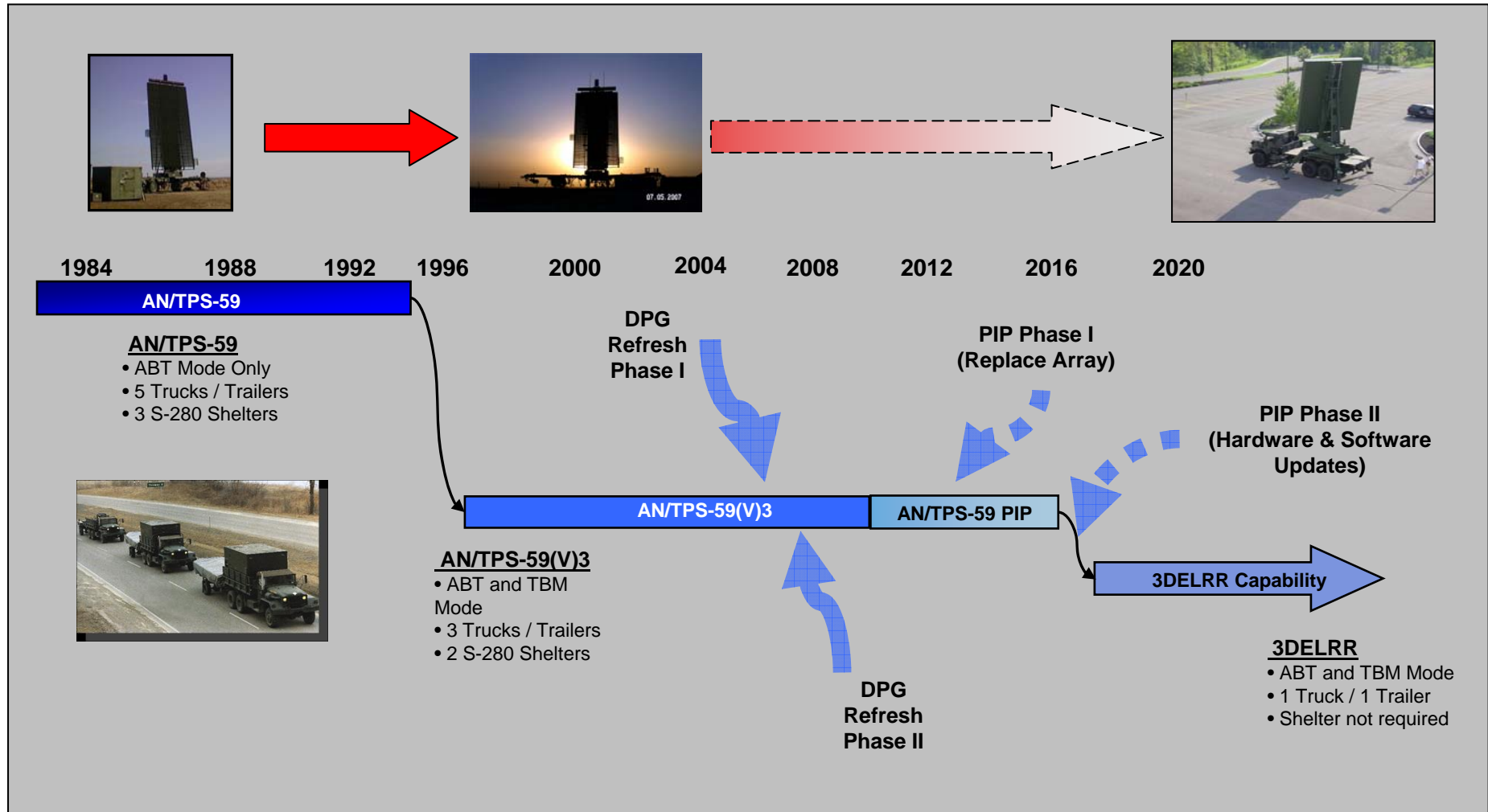
### Future Program Initiatives

- Award contract for AN/TPS-59 Product Improvement Program – Two Phased effort
  - Phase I – Replace current AN/TPS-59(V)3 antenna
    - Retain existing capability while addressing Diminishing Manufacturing Sources (DMS) and obsolescence issues
    - Close the gap on 3DELRR Capabilities
  - Phase II – Hardware and software updates to achieve full capabilities of 3DELRR CDD



## PM Radar Systems Reginald Brown

### AN/TPS-59 Product Improvement Program (PIP)

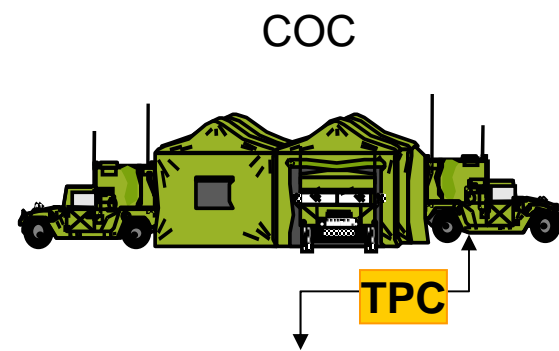
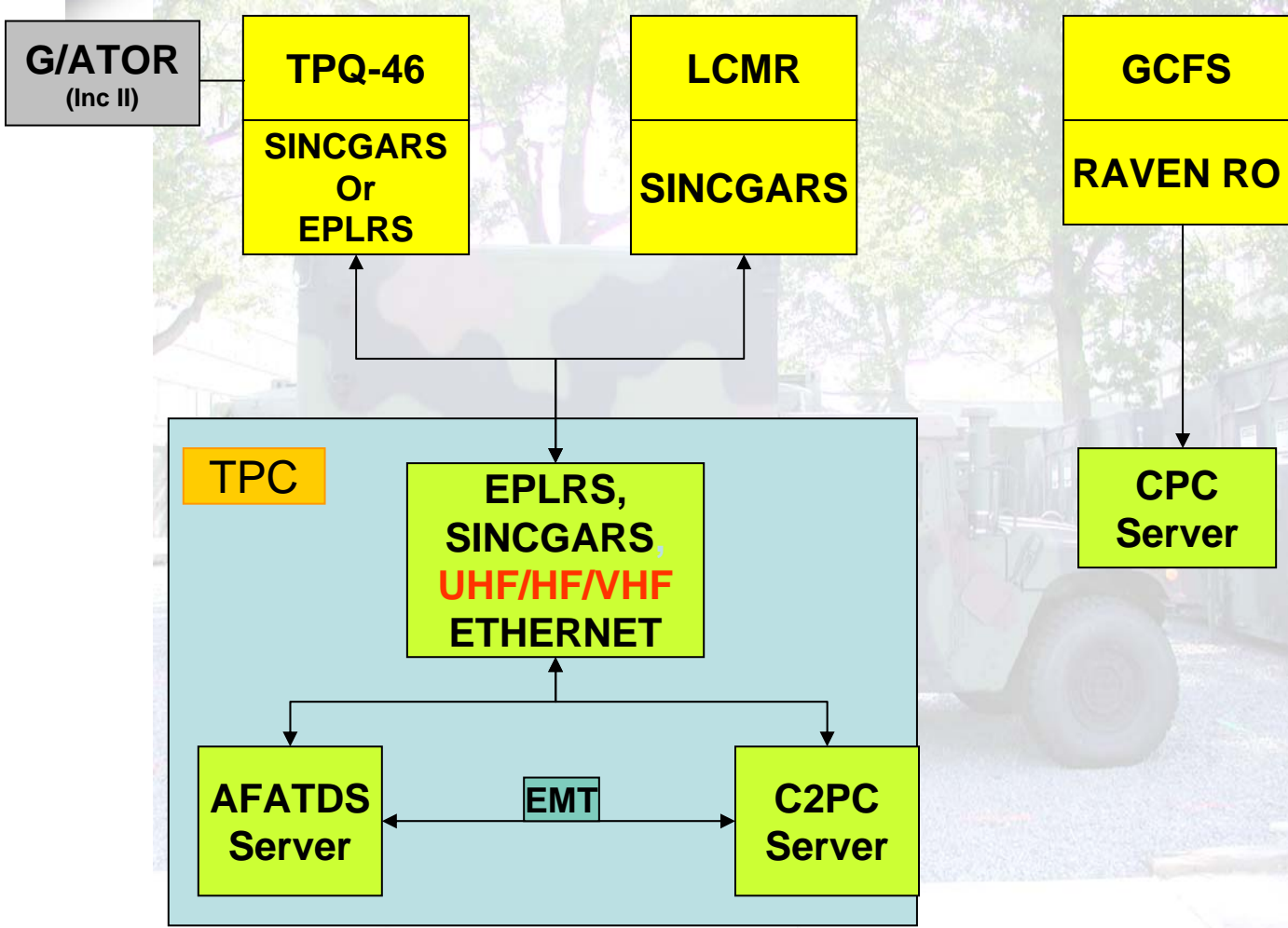




## Target Processing Center

- Statement of Need for the Target Processing Set (TPS) 3900 C14 dated 22 April 2008
  - The TPS shall be housed in a HMMWV mounted shelter capable of integrating into current and future Combat Operations Centers (Threshold = Objective).
  - The Shelter will be environmental controlled and use standard power (Threshold = Objective).
  - The TPC shall be configured and equipped to provide the ability to process radar information developing actionable targets simultaneously from multiple sensors (Threshold) and shall have the ability to correlate and fuse radar information from multiple sensors using automated equipment and procedures without operator intervention (Objective).
  - The TPS shall integrate existing and planned Command and Control (C2) and Fire Support systems using tactical Local Area Network (LAN) or secure digital communications through Internet Protocols (IP) (Threshold = Objective).
  - All activity interfaces, services, policy enforcement controls, and data sharing of the Network Centric Operations and Warfare Reference Model (NCOW-RM) and Global Information Grid (GIG) Key Interface Profiles (KIPs) shall be satisfied to the requirements of the specific joint integrated architecture products, and information assurance accreditation specified in the threshold and objective values (Threshold = Objective).





### TPC Fielding

10 <sup>TH</sup> MARINES 2 EA	11 <sup>TH</sup> MARINES 2 EA	12 <sup>TH</sup> MARINES 2 EA	14 <sup>TH</sup> MARINES 1
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TPC – GWLR, LCMR, GCFS Architecture using fielded H/W



- Introduce the next speaker:  
LtCol Brock McDaniel, PM Air Defense  
Weapons Systems/ Unmanned Systems

# **MAGTF C2, Weapons, and Sensor Development and Integration Product Group 11 Air Defense Weapon Systems/Unmanned Systems**

**Program Manager: LtCol Brock McDaniel**







PM ADWS/US LtCol Brock McDaniel

Description: Manage the development, testing, fielding, and life cycle support of all Marine Corps ground based air defense and systems that support the MAGTF.

- Portfolio: 3 Teams comprised of over 50 military, government civilians, and contractor personnel.
  - Composite Tracking Network(CTN) Team: developing 27 CTN systems
  - Ground Based Air Defense (GBAD) Team: developing 143 Fire Unit and 38 Section Lead Vehicles
  - Unmanned Aerial System (UAS) Team: developing 467 Raven B systems. Supporting NAVAIR with the interface of Tier II and Tier III platforms with MAGTF C2
    - Provide contract vehicle enabling ISR services to VMUs in OIF



PM ADWS/US LtCol Brock McDaniel

## Near-Term Program Initiatives

### CTN:

- Continue developmental testing
- Obtain MS C to produce LRIP systems and enter into operational testing

### GBAD:

- Replace SINCGARS radios
- Replace antiquated data link
- Complete developmental testing

### UAS

- Obtain full fielding decision for Raven B and assist NAVAIR with the fielding and training of Micro UAV capability.





PM ADWS/US LtCol Brock McDaniel

## Future Program Initiatives

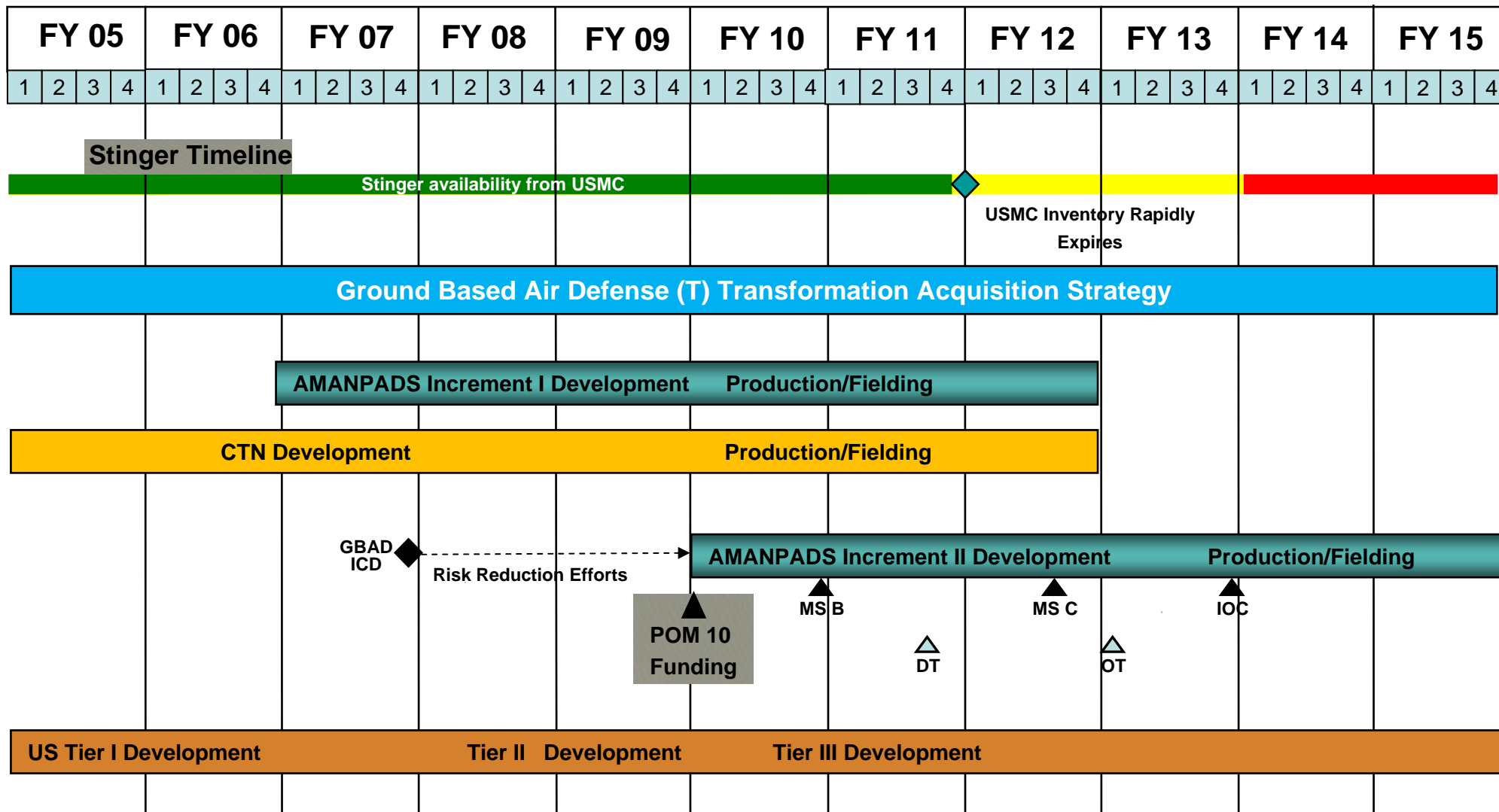
- Conduct an analysis of alternatives to meet the capabilities outlined in the GBAD ICD.
- Select a material solution to meet the Marine Corps requirement to mitigate UAS/FW/RW threats.
- Assist NAVAIR with the selection of a Tier II platform.





PM ADWS/US LtCol Brock McDaniel

# ADWS/US Road Ahead





# **Ground/Air Task Oriented Radar Program (G/ATOR)**

**Deputy Program Manager: Mr. John Karlovich**



- The Program Manager for the **Ground/Air Task Oriented Radar (G/ATOR)** is responsible for design, development, fielding and total life cycle management of the Marine Corps' next generation of expeditionary radar systems.
- The USMC plans to migrate all short/medium range air and ground radar systems towards the capabilities of a single future system, G/ATOR. All other related legacy systems are planned to be phased out by 2017.
  - ✓ Air Surveillance Radar: AN/TPS-63
  - ✓ Air Defense Radars: AN/UPS-3, AN/MPQ-64
  - ✓ Ground Weapons Locating Radar: AN/TPQ-46
  - ✓ Expeditionary Airport Surveillance Radar: AN/TPS-73

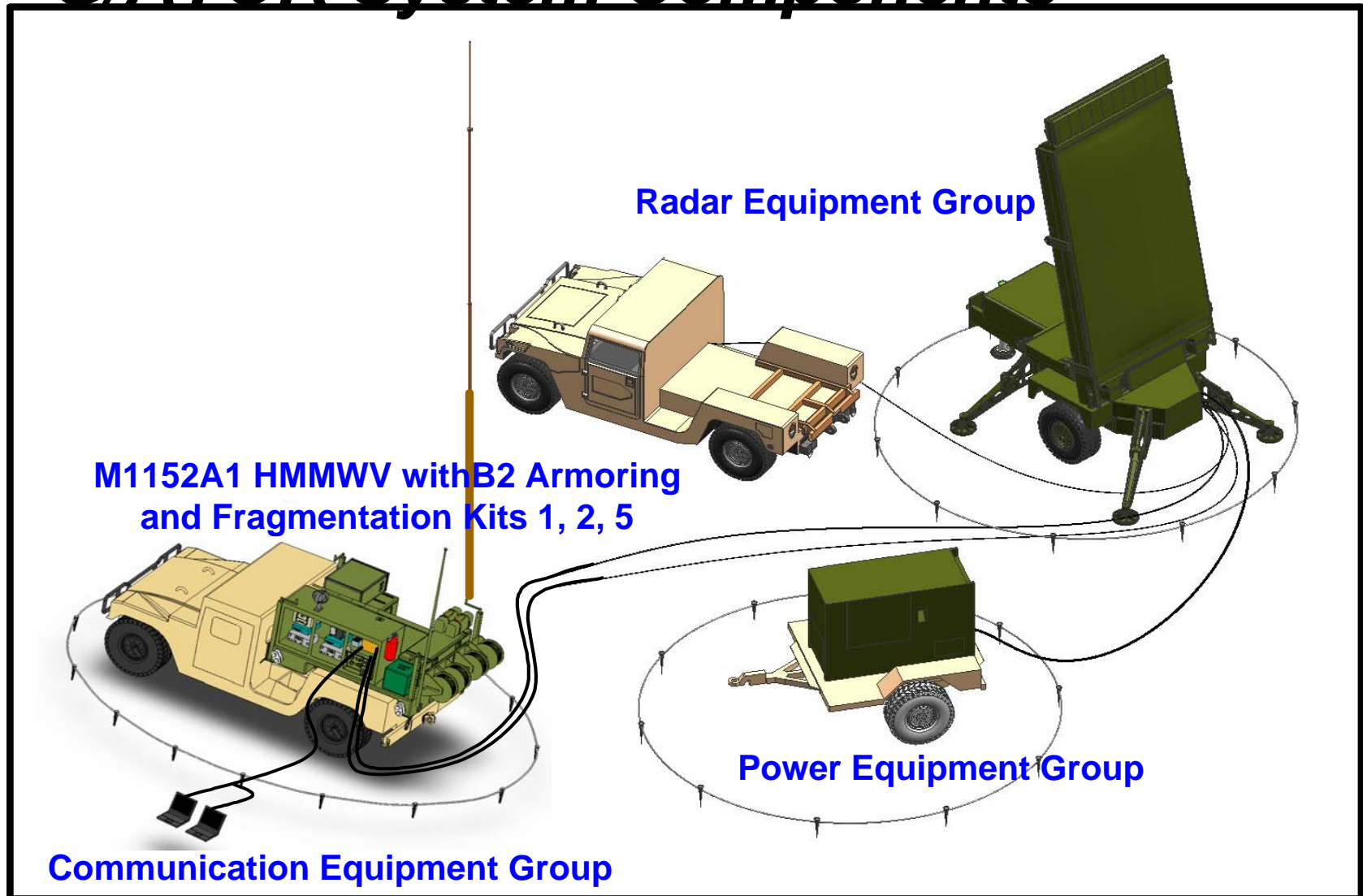




DPM Ground/Air Task Oriented Radar

Mr. Karlovich

# G/ATOR System Components





Appropriations*	FY08	FY08 Supplemental	FY09
<b>RDT&amp;E</b>	\$96.4	None	\$86.0
<b>O&amp;MMC</b>	None	None	None
<b>PMC</b>	None	None	\$17.4

(Note\*: x \$M)



## Near-Term Program Initiatives

- ***G/ATOR Increment I System Development and Demonstration Critical Design Review***
  - 2Q/FY09 CDR Planned
  
- ***JROC approval of Increment IV Airport Surveillance Radar CDD***
  - 4Q/FY08 CDD into KMDS





## Future Program Initiatives

### – *Small Business Innovative Research*

- Pursue beneficial technology insertion in parallel with SDD.

### – *Other Service Interest*

- G/ATOR is a capability that can be leveraged to meet other service requirements.



## Open Discussion Topics

- Innovative technology and advanced capabilities for program insertion.
  - Lightweight 60kW MILSPEC Precision Class HMMWV Towable Generator.
  - Lightweight Advanced Medium Sized Mobile Power System Paralleling Device
  - Lightweight HMMWV Armor



- Panel Questions and Answers