



# Advanced Planning Brief to Industry

Mr Dayle Wright

Program Manager

Air Command & Control and Sensor Netting

June 26, 2023

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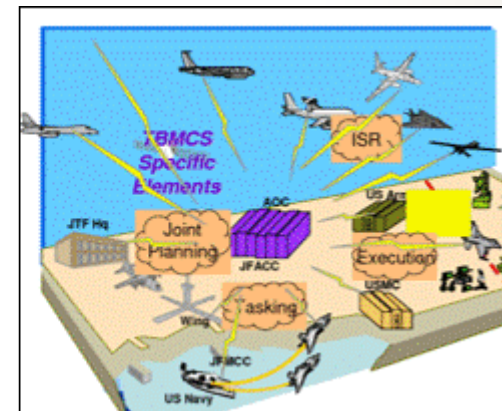


# Air Command and Control & Sensor Netting (AC2SN)



## AC2SN portfolio consists of:

- Common Aviation Command and Control System (CAC2S), CAC2S Small Form Factor (SFF)
- Composite Tracking Network (CTN): USMC variant of Navy Cooperative Engagement Capability (CEC)
- Theater Battle Management Core System (TBMCS-MC): Joint Air Planning Toolset
- TBMCS Replacement Program: Tie to USAF "Kessel Run"





# Common Aviation Command and Control System (CAC2S) PM AC2SN



## Mission

The Common Aviation Command and Control System (CAC2S) is a Joint Force enabler providing an integrated capability to facilitate the six functions of Marine Aviation - Offensive Air Support, Anti-Air Warfare, Assault Support, Air Reconnaissance, Electronic Warfare, and Control of Aircraft and Missiles - to support the Marine Air Ground Task Force (MAGTF).

## Program Description

- CAC2S supports MAGTF, Joint, combined, and coalition operations
- Enables Naval amphibious ship integration
- Continued CAC2S Link-16 interoperability enhancements support Integrated Fire Control, and Network Enabled Weapons

## Program Status

**Acq Phase:** Operations and Sustainment

**AAO/Fielded:** Communications System (CS) 75/75;  
Aviation Command & Control System (AC2S) 50/50; Small Form Factor (SFF) 42/0

**Capabilities:**

- Integral component of Integrated Air and Missile Defense (IAMD)
- Naval amphibious ship integration - CAC2S Afloat
- CAC2S Small Form Factor (SFF): Future capability supporting Expeditionary Advanced Base Operations (EABO) Principles
- USMC Air Traffic Control (ATC) Modernization

## Future Focus Areas

- CAC2S SFF Fielding
- ADS-B Fielding
- MIDS JTRS procurement
- Link-16 Advanced Capabilities (CMN4, CCR4, LET) – to be delivered by Dec 2028
- Passive Sensor Integration
- JLTV Integration
- Continual COTS refresh cycles
- Scheduled MIL STD updates
- Cloud transition



# CAC2S “Common” Building Blocks



Common Building Blocks

## Identical per Agency

**AC2S  
Shellback**



## Sized per Agency

**Operations  
Facility  
(OPFAC)**



**Communications  
System  
(CS)**



## Modular Employment

### Scalable CAC2S Deployments

**TACC**



#### Tactical Air Command Center (TACC)

- Senior MACCS agency, ACE Command
- Current Ops, Future Ops, Future Plans, Aviation Combat Intel
- 168 Warfighter Consoles

**TAOC**



#### Tactical Air Operations Center (TAOC)

- MACCS AAW control agency
- Air surveillance, air control, information exchange, weapons management
- 16 Warfighter Consoles

**DASC**



#### Direct Air Support Center (DASC)

- Primary agency directing air in support of GCE
- Receives, processes, and coordinates requests for immediate direct air support
- 16 Warfighter Consoles



# Composite Tracking Network (CTN)

## PM AC2SN



### Mission

- Joint integrated air command and control tool that receives, processes, and distributes real time composite location track data and sensor measurements to aviation command and control nodes and weapon systems.
- Participates in and is the ground node for the U.S. Navy's Cooperative Engagement Capability (CEC) network providing fire control quality data to Naval weapon systems.

### Program Description

- Project supporting fleet systems including software applications, computing hardware, communications links, spares, personnel, training, and other resources.
- Developed as a US Navy PEO IWS-6 product; the Marine Corps leverages Navy core components including software - adapts software and includes USMC-peculiar equipment/hardware suitable/effective for ground-based operational environment.

### Program Status

**Acq Phase:** Operations and Sustainment

**AAO/Fielded:** 17/9

**Capabilities:**

- Anti-Air Warfare Composite Tracking, Composite ID, and Data Distribution
- Integrated Fire Control (IFC) and Naval Integrated Fire Control-Counter Air (NIFC-CA) enabler

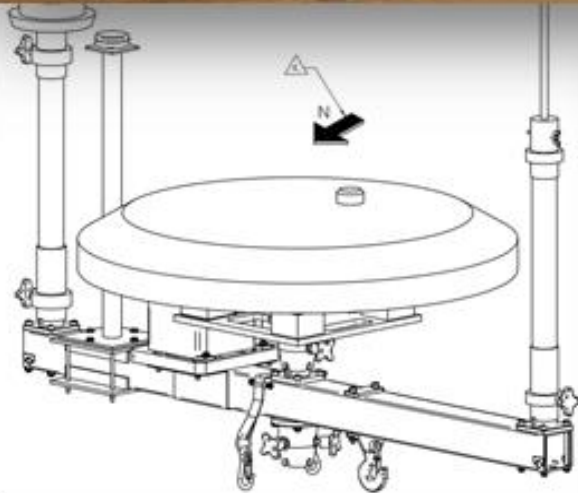
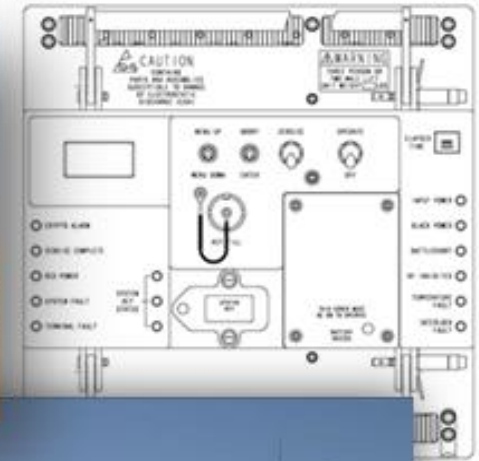
### Future Focus Areas

- Future CEC Increments
- Passive sensor integration
- Multiple ECPs in progress
  - Tech Refresh/Modernization
  - Compass Replacement
  - Laptop Replacement
  - JLTV Integration





# Composite Tracking Network (CTN) System





# Theater Battle Management Core Systems - Marine Corps (TBMCS-MC) and TBMCS-Replacement (TBMCS-R)



## Mission

- Joint mandated air war planning tool for the generation, dissemination and execution of the Air Tasking Order and the Airspace Coordination Order.
- Interfaces with the Common Aviation Command and Control System (CAC2S) and the US Air Forces' theater-specific Air Operations Center.

## Program Description

- Coordinates precision engagement fires, safe passage zones and near-real time warnings.
- Processes combat intelligence, imagery, and airfield status.
- Enables airspace management, assault support processing, close air support (CAS), time-critical targeting, targeting and weapons engagement plans.

## Program Status

**Acq Phase:** Operations and Sustainment

**AAO/Fielded:** 17/17

### **Capabilities:**

- Create, modify and manage Air Component Air Battle Plan (ATO and ACO)
- Coordination of intelligence and targeting data
- Coordination of precision engagement fires, safe passage zones and near-real time warnings

## Future Focus Areas

TBMCS-Replacement (TBMCS-R)

- Monitor USAF agile software acquisition to transition legacy TBMCS capabilities into the Kessel Run All Domain Operations Suite (KRADOS).
- Limited evaluation of KR developmental software deliveries and evaluation USMC-peculiar hosting environment
- Increase extensibility across platforms, minimize consumption of HW/SW resources, rapid development/deployment, scaling of applications, patching, production cycles and tests, increased portability across various platforms and operating systems



# Opportunities



- Future Capability areas of Interest
  - Expeditionary Advanced Base Operations (EABO) focus
  - Integrated Air and Missile Defense (IAMD)
    - Over Match
    - Project Convergence
  - Artificial Intelligence (AI)/Machine Learning (ML)
  - Advanced Battle Management Aides (ABMAs)
  - Multi-domain Integration/JADC2

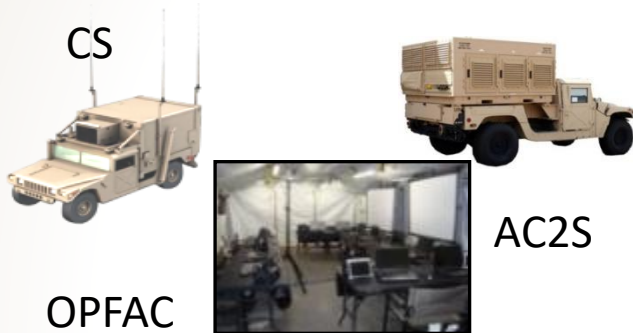




# Questions?



## Common Aviation Command and Control System (CAC2S)



## Composite Tracking Network (CTN)



## Theater Battle Management Core Systems - Marine Corps



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# Advanced Planning Brief to Industry

Mr. Alex Gierber

Business Manager

Ground/Air Task Oriented Radar

26 June 2023

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# G/ATOR AN/TPS-80



## Program Status

- IOC achieved
  - G/ATOR Block 1 Feb 18
  - G/ATOR Block 2 Mar 19
- Low-Rate Initial Production (LRIP) complete. All LRIP systems delivered and fielded.
- Full Rate Production consists of 30 systems, ten systems delivered and fielded
- Twenty-five systems fielded to date

## Program Goal & Mission

G/ATOR provides a single material solution to the requirements for the Multi-Role Radar Systems (MRRS) to support air surveillance, air traffic control, air defense and counter-fire target acquisition. G/ATOR will support rapid emplacement and displacement of short/medium range sensor capability required in all phases of Marine Air/Ground Task Force (MAGTF) Operations

## Future Focus Areas

- Increased availability of parts to enhance reliability, maintainability and readiness
- Increase in staff support to manage and execute Force Design 2030 initiatives
- Integrated Fire Control/Integrated Air & Missile Defense
- Competitively styled sustainment support



# Opportunities



- Identification and qualification of vendors to provide alternate sources for G/ATOR OEM parts that meet form, fit and function specifications at lower cost and/or reduced schedule
- Information and demonstration of next generation technologies (Radar Signal Processor, Transmit/Receive Module, etc) which improve efficiency and may be inserted into G/ATOR with minimal to no hardware redesign
- Antenna Array protective cover
- Program office support for baseline and future radar systems
- Sustainment & Logistics Support





# Questions?



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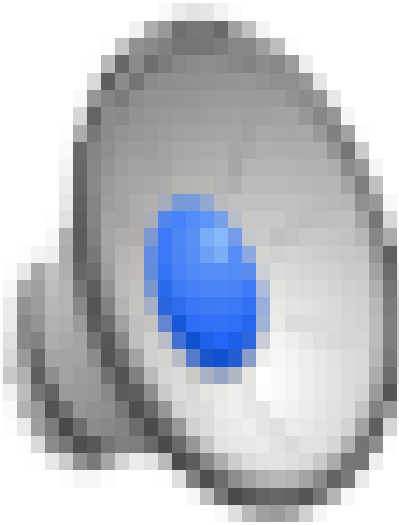
# Advanced Planning Brief to Industry

Col Tim Hough  
Program Manager  
Advanced Amphibious Assault  
26 Jun 2023

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# ACV Video





# ACV



## Mission

Provide and support amphibious combat capabilities that enable our Marines to win.

## Program Description

- Full replacement for the legacy AAV in the Marine Division's Assault Amphibian Battalions
- Maneuvers the surface assault elements of the landing force and their equipment from assault shipping during amphibious operations
- Provides support to seven standing MEUs
- A Family of Vehicles program comprising four variants

## Program Status

**Acquisition Phase:** Production and Deployment Phase including design and development efforts

**AAO/Fielded:** 632/139

### **Capabilities:**

- Ship-to-Shore from 12 nm
- Future variants include 30mm Cannon, Command & Control and Recovery

### **Risks/Opportunities:**

- Lower than anticipated readiness and long lead times for spares negatively impacting readiness

## Key Events & Focus Areas

- ✓ **13 Nov 20:** Initial Operating Capability (IOC) – P Variant
- ✓ **8 Dec 20:** Full Rate Production Decision
  - 2QFY24:** IOC – Command & Control Variant
  - 3QFY26:** IOC – 30mm Cannon Variant
  - 1QFY28:** IOC – Recovery Variant
- New Equipment Training Team (NETT) 2.0
- Transition Training Unit (TTU)
- Proficiency
- Testing

The ACV provides Expeditionary, Protected Mobility and Lift for the Marine Corps Infantry. ACV is a full replacement for the legacy AAV.

#### **Communicate / Modern Networked C4I Suite**

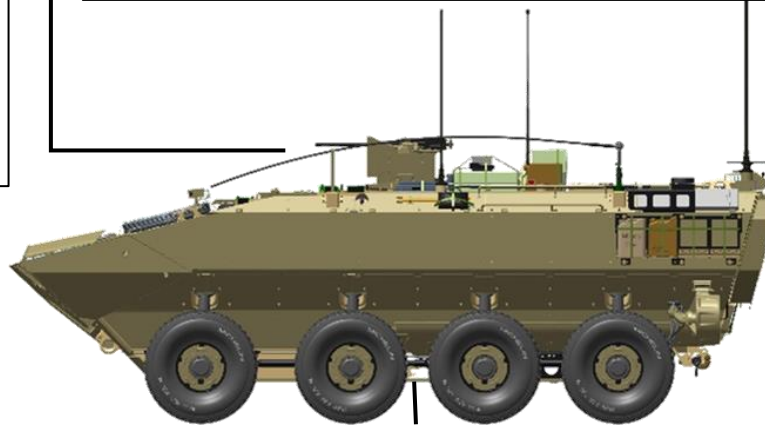
- Intercom System: Internal ACV Communication
- (4) Radio Nets: VHF / UHF (LOS) / UHF (SATCOM)
- Spare Radio Rack Space to Mount an HF Radio (Infantry)
- Joint Battle Command-Platform (JBC-P)
- 110V AC Power accessible to the embarked Infantry for use to maintain organic electronic assets



**Crew:** 3

**Troops:** 13 (Full Combat Load)

Carry 2 x Day Supply for 16 Marines (Food, Water, Ammo)



#### **Protect / Survivable**

Provides MRAP + survivability against underbody Mines & Roadside IEDs

Capable of operating under degraded mobility and moving out of a kill zone



#### **Move (Amphibious Operations)**

- Integrates with Naval Shipping
- Ship-to-Shore Maneuver
- Capable of 12 Nautical Mile Swim
- Ability to operate in Sea State 4, 6ft Surf Conditions



#### **Shoot**

##### **Stabilized Remote Weapon Station (RWS)**

- M2 Heavy Machine Gun or MK-19 Automatic Grenade Launcher
- Capability to accept future weapons
- 360-degree Fields of Fire



#### **Move (Land Operations)**

- Cross Country Performance
- Long Range / Fuel Efficient
- Negotiate 60% Slope [Front] & 30% Slope [Side]

- ACV-C Command Systems Integration Lab (CSIL) at BAE Systems San Jose fully operational to support vehicle integration efforts (CSIL reconfigurable to support ACV-P, ACV-30, and ACV-R communication configuration)
- Delivery to PM AAA begins 1QFY24; NOTM ECP installed at NIWC LANT and fielding to FMF begins 2QFY24
- IOC: 2QFY24 (IOC is met when two command and control vehicles and their security/chase ACV-Ps are integrated into the AA company's headquarters platoon)







Project is executed using a phased approach:

- Phase 3 Contractor Prototype Testing
  - Static & OTM Firing; Toxic Fumes testing at ATC: Aug - Sep 21
  - Basin, Open Ocean & Surf Transits at AVTB: Oct 21
  - E3 and HSI Testing and Evals at NSWC Dahlgren: Nov 21
  - CDR: 17 May 22 (Completion pending closure of 3 critical RFAs)
- Phase 4 Design and Development
  - Contract awarded 15 Aug 22
    - Build and test three production representative test vehicles (PRTVs)
  - Fire Control Software (FCS) design complete 2QFY23
  - PRTV Deliveries 2QFY24
  - Developmental Test Begins 2QFY24
  - Follow-on Operational Test and Evaluation (FOT&E) complete 2QFY25
  - Contract Award - Full Rate Production 2QFY25
- IOC: 3QFY26 (IOC is met when six ACV-30 are integrated into an ACV equipped AA line platoon)



Project is executed using a phased approach:

- Phase 1 Design and Development
  - System Requirements Review: May 22
  - Preliminary Design Review: 7 - 9 Feb 23
  - Critical Design Review: 4QFY23
- Phase 2 PRTV Build and Test
  - Long lead materials contract award: 4QFY23
  - Phase 2 Contract award: 1QFY24
  - PRTV deliveries: 2QFY25
  - Developmental Test: 2QFY25
  - Follow-on Operational Test and Evaluation (FOT&E): 2QFY26
  - Full Rate Production Contract Award: 1QFY27
- IOC: 1QFY28 (fielding two ACV-Rs and their ACV-P chase vehicles to the AA company's headquarters platoon)

## Fielding To Date

- 139 ACV-Ps fielded to Fleet Marine Forces
  - 92 to 3d AABn
  - 47 to AAS

Unit	Mon/FY	Quantity
3d Assault Amphibian Bn	4QFY23	18 ACV-Ps
3d Assault Amphibian Bn	4QFY23	18 ACV-Ps
3d Assault Amphibian Bn	1QFY24	12 ACV-Ps
3d Assault Amphibian Bn	2QFY24	12 ACV-Ps
III MEF	2QFY24	21 ACV-Ps



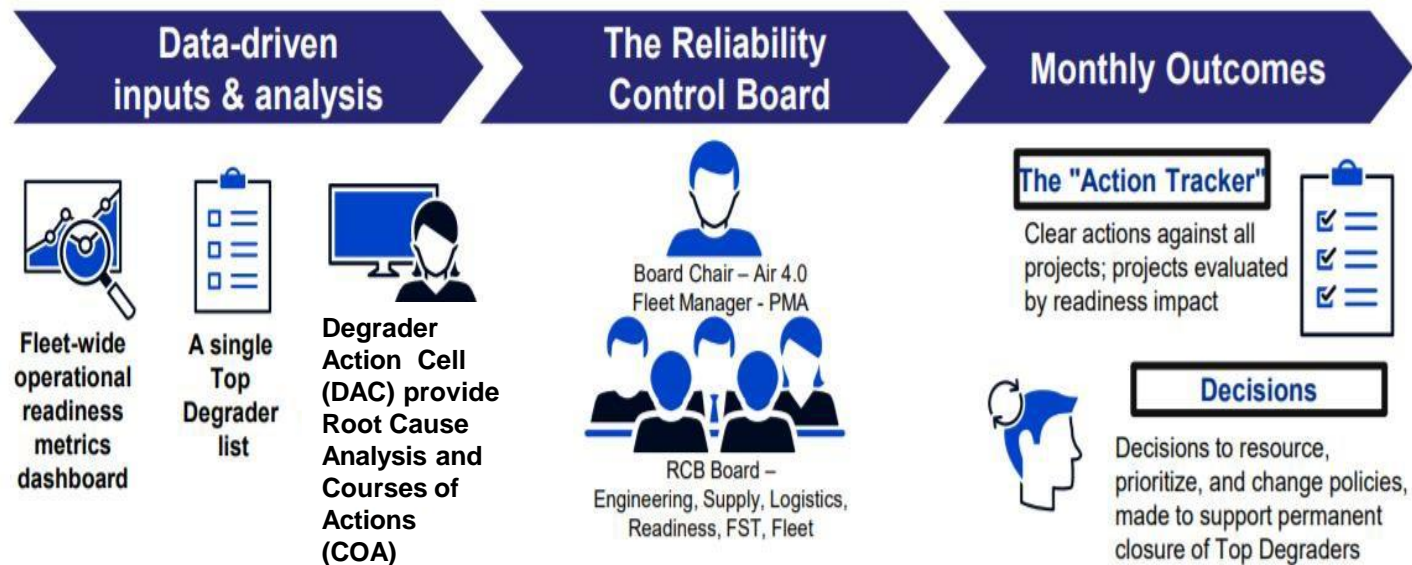
# Proficiency & Readiness Challenges

- Driver Trainer
  - Procure and evaluate two prototype Driver Simulators in FY23 to inform requirements for Suite of Training Systems program of record in POM25
  - Two vendors selected offering both a desktop trainer & Mixed Reality Headset Trainer solution
- Surf Observation (SUROB)
  - PM AAA, Marine Corps Warfighting Lab (MCWL) and NRL/METOC continue to pursue options for SUROB technology to support operations through the surf that are less susceptible to human error
  - MCWL is pursuing SUROB technology, and once mature, we will work with them on a Technology Transition Agreement (TTA)
- Shocks
  - Excessive degradation and failure of shocks
  - Primary causal factors are corrosion from salt water and abrasion from silica sand
  - Shocks will be replaced with an interim solution until the final solution is validated and incorporated into fielded and production vehicles
- Towbar
  - Towbars have been on back order for greater than 24 months
  - DLA to deliver 26 in 3QFY23 and 16 in 4QFY23
  - PM AAA still has 100 on order
  - Main issue – only one supplier available
- Wheel Indicator
  - Requirement has been validated
  - Project team has been assigned
  - Design considerations underway



- Readiness Control Board (RCB)

- Designed to identify, prioritize, execute, and measure the effectiveness of improvements to system readiness
- Provides a mechanism to drive accountability across functions for actions to improve readiness



- Top Ten Readiness Drivers

- Kit Overhaul (Outer CV Boot)
- Electric Started
- Kit Overhaul (Inner CV Boot)
- Wheel End Half Shaft
- Limit Switch
- Pressure Sensor (16 Bar)
- Strut Assembly
- Half Shaft Gasket
- Shock Absorber
- CTIS Manifold





# Opportunities



- RFP: New Equipment Training (recompete via Navy SeaPort-NXG)
  - RFI release anticipated 3QFY24; RFP release anticipated 2QFY25; anticipated award 1QFY26
- RFP: ACV Suite of Training Systems including maintenance trainers, operator trainers, digital classrooms, and an increment 2 of the driver training system
  - RFI released 3QFY22; RFP release is TBD; anticipated award 1QFY25
- RFP: M67854-23-R-XXXX Field Services Support Task Order (recompete)
  - RFP release anticipated 4QFY23; anticipated award 3QFY24
- RFP: AAV FoV FMS support, spare parts / support equipment, and new equipment training
  - RFI release anticipated 3QFY23; RFP TBD; anticipated award 2QFY26
- Modernization strategy under development
  - Develop and field solutions for readiness drivers, improve performance, leverage advancing technology, and counter evolving threat
  - Prioritization and project scoping underway
  - FY24 – Anticipate initial focused RFI's supporting market surveys on specific items and capabilities that range across all ACV essential functions



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# Advanced Planning Brief to Industry

Mr. Don Kelley  
Program Manager  
Ground Based Air Defense  
26 June 2023



# PM GBAD Overall Summary



## PM GBAD

### Future Weapons Systems

(Marine Air Defense Integrated System (MADIS) and Light-MADIS (L-MADIS))

- MADIS Inc 1 (JLTV)
  - ACAT II
  - MDA: PEO LS
- MADIS Inc 1 Blk 2
  - C-UAS Effector
  - OSD-directed development
- L-MADIS
  - Urgent Need (MRZR)
  - ACAT IVT (ULTV)
  - MDA: PM GBAD

### Fixed Site

Counter-Unmanned Aircraft System (C-UAS)

- Installation-Counter Unmanned Aircraft System (I-CsUAS)
  - Urgent Need
  - Program of Record

### A-MANPADS/MRIC

Advanced-Man Portable Air Defense System/Medium Range Intercept Capability

- A-MANPADS
  - In Sustainment
- Stinger Training System
  - Abbr. Acquisition Program (AAP)
  - MDA: PM GBAD
- MRIC
  - Middle Tier Acquisition (MTA)
  - MDA: PEO LS



# Fixed Site Counter-small Unmanned Aircraft System (CsUAS) PM GBAD



## Mission

Provide CONUS and OCONUS Commanders with a configurable and scalable capability to protect designated covered facilities or assets aboard fixed site locations from threat small unmanned aircraft systems to fill a gap in installation security and anti-terrorism force protection in accordance with Title 10 U.S. Code § 130i or host nation policy.

## Program Status

**Acq Phase:** Enter as an Acquisition Category (ACAT) III program with the next decision at Milestone C

**AAO/Fielded:** 34 sites/6 fielded under Urgent Acquisition

### **Capabilities:**

- Provide a 24/7, all weather, I-CsUAS protection capability
- Employ an open architecture system that executes a detect, track, identify, and defeat “kill chain”
- Complement and be interoperable with existing and future installation force protection systems to provide a seamless transition
- Continue to protect defended assets from small Unmanned Aircraft Systems throughout the operating environment

## Program Description

- Delivers non-kinetic and kinetic counter-unmanned aircraft system capabilities to defeat the full spectrum of Low-Altitude Low Observable/Low Radar Cross Section threats to Critical Infrastructure
- System of Systems with modular and scalable components designed to detect, track, identify, and defeat unmanned aircraft systems
  - Installation-Counter small Unmanned Aircraft System (I-CsUAS)
  - Five sites fielded under Urgent Capability
  - Sixth site in process

## Future Focus Areas

- I-CsUAS enduring requirement
  - Capability Development Document approved 3 May 2023
  - Draft Request For Proposal (RFP) planned June 2023
  - Industry Day, 12 -13 July 2023
  - Final RFP release planned 4QFY23
  - Full and Open Competitive Contract Award
  - Non-development components; Technology Readiness Level (TRL) 8/9; when integrated together provide a system that is no less than TRL 7





# Light-Marine Air Defense Integrated System (L-MADIS) PM GBAD



## Mission

Enable Marines to counter the evolving air threat from the ground.

## Program Description

- Delivers non-kinetic and kinetic counter-unmanned aircraft system capabilities to defeat threats to Marine Air-Ground Task Force commander's vital areas
- On-the-move capability integrated onto an Ultra Light Tactical Vehicle and transportable via MV-22 and CH-53

## Program Status

**Acq Phase:** Pre-Milestone C, Engineering and Manufacturing Development Phase, Acquisition Category (ACAT) IV(T)

**AAO/Fielded:** 21/0

### **Capabilities:**

- Non-kinetic defeat (multi-function Electronic Warfare subsystem)
- Kinetic defeat (man-portable Stinger missile)
- Passive detection (electro-optical/infrared sensors) & radio frequency passive sensor
- Active detection (360-degree radar)

## Future Focus Areas

- Future enhancement efforts for component upgrades will be required as the threat evolves
- Additional kinetic capability as technology matures



# Marine Air Defense Integrated System (MADIS) PM GBAD



## Mission

Enable Marines to counter the evolving air threat from the ground.

## Program Description

- Provides Marine Air/Ground Task Force commander short range ability to detect, track, identify, and defeat aerial threats
- Defends maneuver forces and critical sites against unmanned aircraft systems and rotary wing/fixed wing threats

## Program Status

**Acq Phase:** Production and Deployment Phase  
(Low-Rate Initial Production), ACAT II

**AAO/Fielded:** 131/0

### **Capabilities:**

- Kinetic defeat (30mm cannon & Stinger missile)
- Non-kinetic defeat (multi-function Electronic Warfare subsystem)
- Passive detection (electro-optical/infrared sensors, meteorological sensor and radio frequency passive sensor)
- Active detection (360-degree radar & Mode 5 Identification Friend or Foe)

## Future Focus Areas

- Future enhancement efforts for component upgrades will be required as the threat evolves
- Counter-unmanned aircraft system lethality improvements as technology matures
  - Counter Swarm
- Training systems
  - MADIS Virtual Trainer, anticipated 1QFY24
  - MADIS Gunnery Trainer, anticipated TBD
- MADIS Block 2, Counter-Unmanned Aircraft System Engagement System, will provide increased lethality to MADIS defense and be implemented during Full Rate Production
  - Will provide non-kinetic or kinetic hard kill against Group 1-3 UAS threats



# Medium Range Intercept Capability (MRIC) PM GBAD



## Mission/Platform

Enable Marines to counter the evolving air threat from the ground. Focus on cruise missiles.

## Program Description

- Missile system which detects, tracks, identifies and defeats enemy cruise missile threats, unmanned aircraft systems, and other identified aerial threats
- Provides defense of permanently fixed and operationally fixed site assets
- Prototype integrates existing USMC radar (Ground /Air Tactical Oriented Radar (G/ATOR)) and Command and Control (C2) system (Common Aviation Command and Control System (CAC2S)) with Iron Dome components and Tamir missiles

## Program Status

**Acq Phase:** Middle Tier Acquisition , Rapid Prototype (ends FY25)

**AAO/Fielded:** 1 platoon (4 launchers, 1 C2, 80 interceptors)/0

**Capabilities:** Defense against

- Cruise missiles
- Groups 3-5 unmanned aircraft

## Future Focus Areas

- Continue to make more expeditionary
- Increased lethality
- Increase ability to defeat range of cruise missile threats



# Opportunities



Program	Event	Timeline	Estimated Value (\$)
I-CsUAS PoR	Industry Day	4QFY23	N/A
I-CsUAS PoR	RFP	1QFY24	TBD
MADIS	Virtual Trainer	1QFY24	TBD
MADIS	Gunnery Trainer	TBD	TBD
MADIS Block 2	RFP (competitive award)	4QFY23	TBD
GBAD	Program Office Acquisition Support Recompete (small business set-aside)	1QFY24	TBD





# Questions?



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