



Advanced Planning Briefing to Industry 30-April – 2 May 2012

Marine Air Ground Task Force (MAGTF)
Command, Control and Communications
(MC3)

Colonel Peter Reddy





Mission

Acquire and sustain command, control, communications, and counter improvised explosive device systems to enable the Marine Corps Air-Ground Task Force to accomplish their mission.

Priorities/Vision

- **Support the Operating Forces (deployed or preparing to deploy).**
- ❖ Develop and sustain world-class, high performance command, control, communication; counter improvised explosive device; and counter radio-controlled improvised explosive device warfare systems capable of operating in an integrated MAGTF, Joint, and coalition environments, and do so affordably and efficiently.
- **Develop work force (military and civilian) through appropriate acquisition and professional training, education, certification and leadership development; enhance project planning processes; support workforce with adequate space and computer resources.**
- ***** Ensure effective integration and support of all MC3 programs into overarching portfolio; consolidate MC3 into a high performing "team of teams" providing essential capabilities to the warfighter.





MAGTF C3 Context

The Marine Corps is America's Expeditionary Force in Readiness — a balanced air-ground-logistics team. We are forward-deployed and forward-engaged: shaping, training, deterring, and responding to all manner of crises and contingencies. We create options and decision space for our Nation's leaders. Alert and ready, we respond to today's crisis, with today's force ... TODAY. Responsive and scalable, we team with other services, allies and interagency partners. We enable and participate in joint and combined operations of any magnitude. A middleweight force, we are light enough to get there quickly, but heavy enough to carry the day upon arrival, and capable of operating independent of local infrastructure. We operate throughout the spectrum of threats — irregular, hybrid, conventional — or the shady areas where they overlap. Marines are ready to respond whenever the Nation calls ... wherever the President may direct.

--Gen James F. Amos, 35th CMC, Commandants Planning Guidance

"No single activity in war is more important than command and control."

"Command and control by itself will not drive home a single attack against an enemy force. It will not destroy a single enemy target. It will not effect a single emergency resupply. Yet none of these essential war fighting activities, or any others, would be possible without

effective command and control.

Without command and control, campaigns, battles, and organized engagements are impossible, military units degenerate into mobs, and the subordination of military force to policy is replaced by random violence. In short, command and control is essential to all military operations and activities."

MAGTF C3 Context



Maneuver

Fires

Intelligence

Logistics

Force Protection





Guidance & Concepts

mandant of the Marine Corps Idant's Planning Guidance

2010



MARINE CORPS

FY 2012 MAGTE C2 ROADMAP



Planning and executing in response to Priorities of the 35th CMC

- We will continue to provide the best trained and equipped Marine units to Afghanistan. This will not change. This remains our top priority!
- We will rebalance our Corps, posture it for the future and aggressively experiment with and implement new capabilities and organizations.
- We will better educate and train our Marines to succeed in distributed operations and increasingly complex environments.
- We will keep faith with our Marines, our Sailors and our families.

Planning and executing in response to Vision & Strategy 2025

- Develop necessary capability and capacity to effectively operate in the information environment.
- MAGTF CE's optimized for amphibious and contingency operations; properly equipped with modern and secure C2, intelligence, communications, and networking systems.
- Integrate C2 and ISR capabilities down to the squad level.
- ACE: secure, network-enabled, and digitally interoperable to ensure it is responsive, persistent, lethal, and adaptive.

Efforts and support of the Marine Operating Concepts 2010's direction for the MAGTF & CE

 Command will continue to decentralize—and the MAGTF commander and his staff need to be networked into the major subordinate elements (MSE) to command and facilitate coordination and information flow. Improved communications, over-the-horizon, on-the-move, will aid in facilitating information flow.

MAGTF C3 Core Ideas

- Commander/Leader centric
- Network enabled
- Information Assurance
- Collaborative, shared situational understanding
- Performed by all echelons
- Can be performed anywhere in the battlespace

Characteristics of MAGTF C3 Systems

- Common: Command echelons use the same equipment. Unique MAGTF sensors and intelligence feeds enter via a standard gateway.
- Modular: C2 and communications system are designed to enable component utilization that logically supports a variety of configurations for various C2 echelons across the MAGTF.
- Scalable: Software and hardware components are added and subtracted to facilitate C2 functions for all MAGTF operations centers.
- Interoperable: C2 and communications system must possess the interoperability necessary to ensure success in joint and multinational operations as well as interactions with other government agencies (OGAs) and nongovernmental organization (NGOs).
- Agile: To support expeditionary forces and operational concepts, the communications system must be agile. The key dimensions of C2 and communications system agility are: Responsiveness, Flexibility, Innovation, Adaptation, Reliability, Security, Survivability.
- Trusted: C2 and communications system users must have confidence in the capabilities of the network and the validity of the information made available by the network.
- Shared: Sharing allows for the mutual use of the information services or capabilities between entities of the operational environment. This ability may cross functional or organizational boundaries.

MCSC adjusting and executing in response to USD(AT&L) Mandate for Better Buying Power

- Target Affordability and Control Cost Growth.
- Incentivize Productivity and Innovation in Industry.
- Promote Real Competition.
- Improve Tradecraft in Services Acquisition.
- Reduce Non-Productive Processes and Bureaucracy.
- Do more without more.

Staying on target with ASN RDA Priorities

- Getting the requirements right
- Making every dollar count
- Performing to Plan
- Minding the health of the industrial base





MAGTF C3 Roadmap

"Predominant in all command and control development are the essential human factors in war characterized by friction, uncertainty and complexity."

Richard P. Mill

- Pursue development of solutions that are not system-centric, but that enhance leadercentric, network enabled operations today and in the future.
- Make decisions regarding capability, density or a combination of the two so that the solutions provided to our operating forces are the best that available resources can buy.
- Reduce the structure and emphasize the Marine Corps as a middleweight force in an environment of fiscal constraint.
- Reduce our systems inventory and our sustainment and training costs by balancing desired capability with economic reality.
- Sustain and educate our force to better prepare for future conflict in increasingly dynamic, hostile and widely dispersed conditions with innovative

command, rapid feedback, and independent decision-making at all levels. **FY 2012 MAGTF C2 ROADMAP** Command and control is the glue that connects the MAGTF.

Leverage technology to enable decentralized



objectives

MARINE CORPS SYSTEMS COMMAND PROGRAM EXECUTIVE OFFICER LAND SYSTEMS



Portfolio Integrated Capability Framework

Providing MAGTF-Wide C3 Integration

Demonstrate Joint C3 capabilities and interoperability Capabilities Requirements **Group and align** integrated capabilities and capability sets to Collection / Mission Kill meet component Customer Interface **Chain** Analysis strategic objectives Capability (Gaps, Risks) Training, Assessment & **Analysis** Exercises Enterprise Solutions Architecture Development & Focus on long-term **Analysis** SoS Testing & End to End Evaluation planning for integrated Enterprise Requirements & Test capabilities rather than on **Portfolio** Allocation "programs" Allocation System Testing, System **Evaluation &** Requirements **SETR** Certification System Integration & Test **Enable enterprise agility** Design through continuous review, Implementation reprioritization, and rebalancing of capabilities to meet changes in **System Engineering** component strategic

Individual systems specific engineering nested within SOS engineering approach.

Identify and improve synergies and efficiencies and reduce redundancies

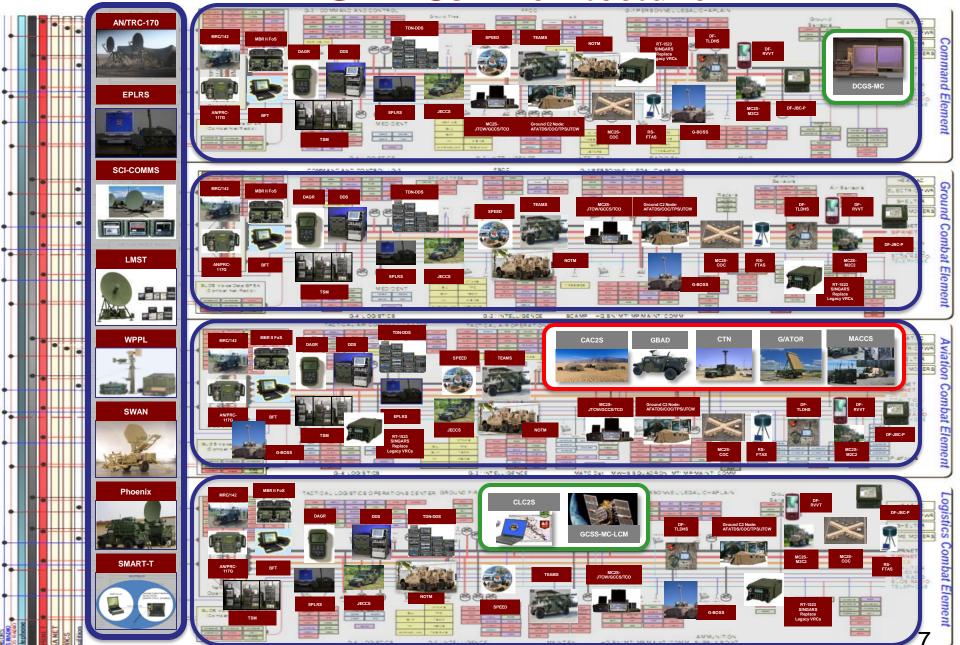
The portfolio integrated capability framework enables evaluation of an integrated portfolio of MAGTF C3 capabilities

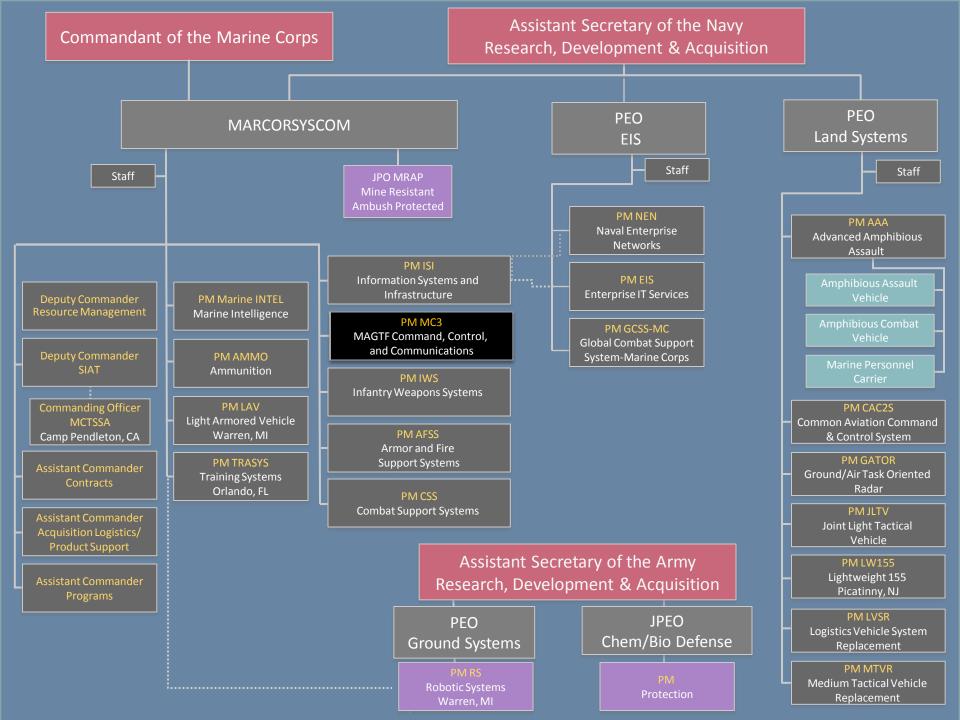
Identify strategic technology vectors

Consolidate end-to-end MAGTF C3 capabilities to effectively coordinate with MAGTF C3 enablers

Working in concert with the Technical Authority (SIAT) to engineer MAGTF C3

MAGTF C3 Architecture









Product Managers

❖ Counter Improvised Explosive Device
Mr. Mark Billow

❖ Digital Fires and Situational Awareness
Major Brian Newbold

❖ Improvised Explosive Device Detection Dogs
LtCol Kenneth Burger

❖ MAGTF Command and Control Systems
LtCol Tyrone Ferrel

❖ Networking and Satellite Communications
Mr. Gregory Pardo

❖ Radar Systems
Mr. David Buck

❖ Tactical Communication Systems
Mr. Lou Peradotto

❖ USMC Counter Radio Controlled Improvised
Mr. Harry Downey

Explosive Device Electronic Warfare

Assistant Program Managers

Business Manager
Mr. John Maurer

Contracts ManagerMs. Lee Hoyland

❖ Lead Financial Manager
Mr. James McGregor

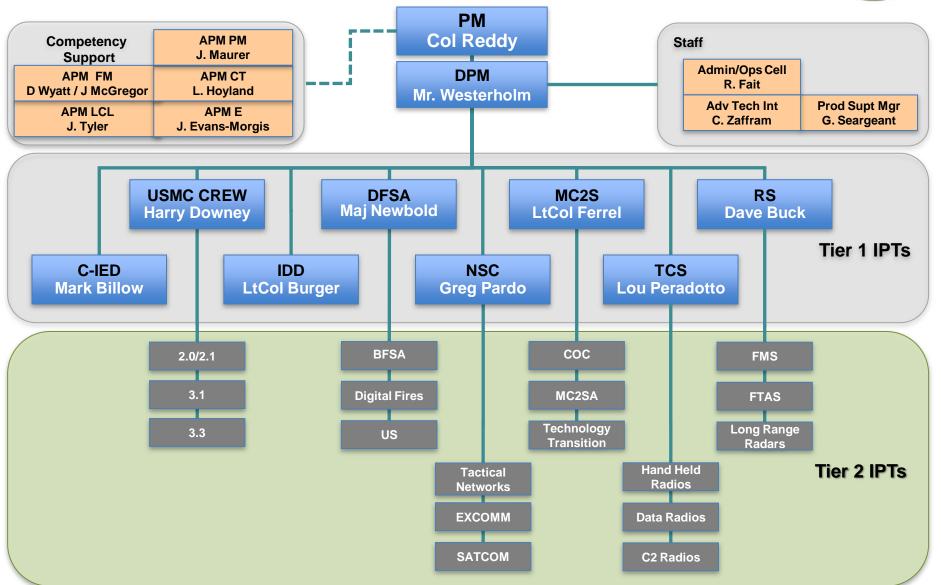
Ms. Diana Wyatt

❖ Lead Engineer
Ms. Jeanette Evans-Morgis

❖ Lead Logistician
Mr. John Tyler











Counter Improvised Explosive Devices (CIED)

C-IED MISSION

To develop, procure, integrate, field and provide life cycle management of Improvised Explosive Device (IED) Detection Systems for the warfighter in a timely and cost effective manner while maintaining the highest standards of professional integrity.

RMNIIS

Rugged Mobile Non-Intrusive Inspection System (RMNIIS). The RMNIIS provides the Warfighter the ability to scan vehicles and cargo at entry control points for organic and inorganic threat material.







PRDSS

Portable Rapid Deployment Surveillance System (PRDSS). Team PRDSS is committed to support of ground based 360 degree camera systems. PRDSS provides the warfighter the capability to conduct persistent surveillance and increases their resources for IED detection.



Counter Suicide Bomber

Counter Suicide Bomber System (CSBS). The Counter Bomber provides the capability to screen personnel at a stand-off distance of up to 100 meters and provide threat assessments of each subject in real time, providing the warfighter with a "First Look' option.



Vehicle Optical Sensor System (VOSS). The VOSS Enables Route Clearance & EOD Teams vehicle crews to quickly locate and identify IED hazards with a 360 degree "eyes on" camera which utilizes high quality color daylight, night vision, and thermal imagery mounted on CAT I Cougars, LAV and M-ATV.



SECURE 1000

The Secure 1000 (S-1000) is a non-intrusive personnel scanning system which detects metallic and non-metallic objects concealed under clothing. The SECURE 1000 provides detection capabilities for personnel borne IEDs and the timely and professional acquisition and support of SECURE 1000 equipment.







Counter Radio-controlled IED (RCIED)

Electronic Warfare Systems (USMC CREW)

REW MISSION

To develop, procure, and provide life cycle management of logistically supportable, fully integrated, USMC CREW, G-BOSS, and Biometrics systems in a timely and cost effective manner. USMC CREW will participate and coordinate programmatic efforts with other U.S. Military Services to leverage systems development, interoperability, supportability and cost effectiveness.



CVRJ (V)1 2.1



CVRJ (V)2 2.1

CVRJ

CREW Vehicle Receiver Jammer (CVRJ). Vehicle-mounted active and reactive electronic countermeasure that jams or disrupts RCIED detonation signals and provides a personnel protection envelope.

JCREW and G-BOSS

G-BOSS: Expeditionary, ground-based, self-contained, multi-spectral sensor-oriented, persistent surveillance system used to observe, collect, detect, identify, classify, track, and report on contacts, objects of interest, and assessed threats utilizing a fused video and sensor data display. JCREW: Next Generation **CREW System for Global** Operations; dismounted, mounted, fixed site configurations



THOR III & Biometrics

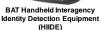
patrols.

THOR III: Man-portable Counter RCIED solution for selected threats. **BAT: Provides Marines** capability to identify personnel wanted by coalition forces and identifies persons of interest while conducting normal



Biometric Automated Toolset









Biometric Automated Toolset (BAT) Server





Improvised Explosive Device (IED)

Detection Dogs (IDDs)

Detection Dogs (IDDs)

- First infantry unit deployed with 34 IDDs in Sep 2011 (up from 13)
- UUNS requirement met in Jan of 2012
- Camp Lejeune/Pendleton Temp Kennel facilities operational Apr 2012
- Certified 504 USMC and 69 UK IDDs
- Executed 22 USMC Handler
 Training Courses in support of 22 units
- 3rd FMS case in support of the UK to be awarded in Apr 2012





Digital Fires And Situational Awareness (DFSA)

DFSA MISSION

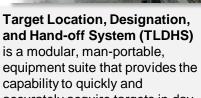
DFSA develops, modernizes, and sustains affordable, world class, high performance Blue Force Situational Awareness and Advance Targeting Systems capable of operating in integrated MAGTF, joint and coalition environments.

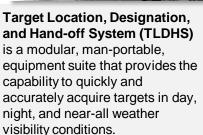


DIGITAL FIRES

Advanced Field Artillery Tactical Data System (AFATDS) Family of Systems provides the MAGTF the ability to rapidly integrate all fire support assets into maneuver plans via digital data communications links.













Joint Battle Command-Platform Family of Systems (JPC-P) Increment I, Blue Force Tracker (BFT FoS), will provide tactical input/output battlefield digitized PLI and SA to enhance friendly forces, and integrate the blue force COE into a COP. Increment II, The Joint Battle Command Platform (JBC-P) will consists of JBC-P software, a stand-alone dismounted computing platform (handheld or end user device), and improvements to dismountable variants in future refreshes.



UNMANNED SYSTEMS

MAGTF C2 Integration of **Unmanned Systems and Remote** Video Terminals (RVT). The portfolio currently consists of two general capabilities: Unmanned Aircraft Systems (UAS) which is Group 1 WASP, RAVENB, PUMA and STUAS along with RVT which is VideoScout and RVVT.





(MAGTF) Command And Control (C2) Systems (MC2S)

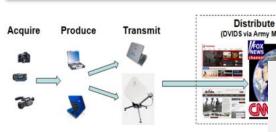
MC2S MISSION

MC2S delivers to the Marine warfighter an end-to-end, fully integrated, cross functional set of MAGTF Command & Control (C2) Capabilities across five-echelons of Combat Operations Centers through a Common MAGTF C2 Software Baseline.



MC2SA

MAGTF C2 Systems and Applications (MC2SA) provides the common, modular and scalable collaborative planning software for all elements and echelons of the MAGTF and is the software baseline for MAGTF C2.



PUBLIC AFFAIRS EQUIPMENT

Provides PA Marines the capability to collect, produce, transmit, and manage still, video, written, and audio communication products in order to globally engage various publics.

COMBAT CAMERA SYSTEMS

CCS supports all elements of the MAGTF by providing a full range of professional imagery collection, print and reproduction capabilities.



TECH TRANS

The transition of S&T projects such as the Mobile Modular Command & Contro (M2C2) system and the Network-On-The-Move (NOTM) capability into Programs of Record (PoRs) ensures warfighters are equipped with cutting edge technology.

COC

The Combat Operations Center (COC) is a deployable, self-contained, centralized facility that provides shared command and control / situational awareness (C2/SA) functionalities in a collaborative environment.



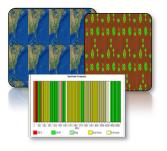




Networking And Satellite Communications (NSC)

NCS MISSION

NSC Team leads the Marine Corps' effort in research and development, acquisition and sustainment of tactical networking and switching equipment; wireless broadband, and satellite ground communication systems, as well as cryptographic equipment.





SATCOM SYSTEMS

EHF and SHF wideband SATCOM systems providing long-haul communications to higher headquarters for reach back into the GIG and intra-MAGTF communications down to the Battalion level. Systems include ECCS, LMST, Phoenix, SMART-T, DAGR, GBS TGRS, and SCI COMMS.





TACTICAL NETWORKS

Tactical switched systems, technical control functions, communications security to our Operating Forces. Systems being developed include COMSEC, DTC-R, TSM, and JECCS.





EXPEDITIONARY COMMUNICATIONS

Tactical networking systems and other GIG-enabling technology that enhances the expeditionary Operating Forces. Systems being developed include NOTM, TDN DDS-M, VSAT, and NPM/SPEED.



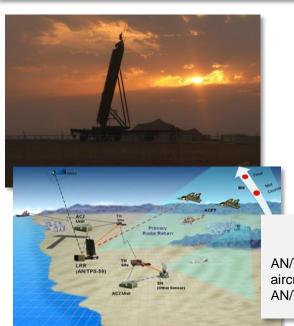




Radar Systems (RS)

RS MISSION

To develop, procure, integrate, field and provide life cycle management of logistically supportable, fully integrated and interoperable Radar Systems and to provide our customers timely and cost effective support while maintaining the highest standards of professional integrity.



Foreign Military Sales (FMS) Team

The FMS Team supports multiple FMS cases for Kuwait, Bahrain and Egypt to provide sensor and C2 platforms that are interoperable with US forces. The FMS Team are representatives of the Command in these international communities, and support US Foreign Policy objectives as well.















AN/TPQ-46

Family of Target Acquisition Systems (FTAS)

FTAS: Equipment required to search, detect, track, locate and process hostile indirect fire (IDF) weapons - mortar, artillery, and rocket projectiles for counter fire or servicing. The equipment includes the AN/TPQ Firefinder, the AN/TPQ-48 Lightweight Counter-Mortar Radar and the AN/TSQ-267 Target Processing Set.

Long Range Radar Systems

AN/TPS-59: 3-D Long Range Radar, which detects aircraft and tactical ballistic missiles. AN/TPS-63: 2-D Medium Range Radar



AN/TPS-63







Tactical Communication Systems (TCS)

TCS MISSION

TCS team leads the Marine Corps' tactical communication modernization effort through the acquisition and life cycle management of tactical communication systems supporting combat and training operations.



Command and Control Radios

MultiBand Line-of-Sight and Satellite manpackable and vehicular mounted capabilities.









Handheld Radios

Tactical Hand Held Radio (THHR) :Line-of-Sight handheld and vehicular mounted capabilities supporting the United States Marine Corps.





MARINE CORPS SYSTEMS COMMAND

Continued GBOSS & IDS Development and Production

Refresh & Sustainment of Networking Systems (WFN-T / TSM / COMSEC)

Refresh & Sustainment of SATCOM Systems

Tactical Communications Modernization and JTRS migration

CIED Program Office & System Sustainment Support for the MAGTF

Sustainment and Handler training of the IED Detector Dogs (UUNS 10230UA)

\$17.8M

\$83.6M

\$14.6M

\$2.0M

\$3.8M

\$0.0M

\$0.0M

\$100.2M

\$32.2M

\$14.5M

\$4.5M

\$2.7M

\$0.0M

\$0.0M

\$88.7M

\$134.0M



\$166.7M

\$10.7M

\$72.8M

\$20.0M

\$1.1M

\$3.4M

\$0.0M

\$0.0M

\$20.7M

\$11.3M

\$64.9M

\$15.2M

\$1.0M

\$5.7M

\$0.0M

\$0.0M

\$55.2M

\$20.3M

PRUGRAM EXECUTIVE OFFICER LAND 3131					EIM 9	
YDP Investments	FY12	FY13	FY14	FY15	F	
RDT&E	\$27.0M	\$33.0M	\$36.4M	\$18.7M	9	

USMC CREW

NSC

TCS

C-IED

IDD

PMC \$62.5M \$261.5M \$150.2M **\$164.0M** O&M \$21.1M \$84.8M \$90.7M \$20.5M

CVRJ/QRD -- BAND C Upgrade Kits -- JCREW 3.1 -- JCREW 3.3

FY16 \$16.5M \$168.6M \$20.8M

\$13.3M

\$96.9M

\$13.6M

\$0.6M

\$69.6M

\$11.2M

\$46.3M

\$46.36M

\$8.9M

\$176.1M

\$32.1M

\$0.5M

\$5.7M

\$109.6M

\$18.1M

\$44.8M

RDT&E

RDT&E

PMC

O&M

O&M OCO

O&M OCO

PMC

0&M



RDTE

OMMC

RDTE

OMMC

PMC

PMC

MAGTF C2

Systems

Radar

Systems

MARINE CORDS SVETEMS COMMAND

JETS

COC CAPSET I

\$50.2M

\$40.3M

\$37.0M

NOTM Increment 2

\$17.5M

\$24.0M

\$4.7M

TPS-59 PPM2

TPS-63 Sustainment

FTAS - LCMR. TPs. TPQ-46 Sustainment

SOI

PAE

RVVT

\$23.2M

\$29.9M

\$35.9M

\$7.5M

\$5.6M

\$30.8M

C2 OTM/Airborne

\$30.1M

\$37.5M

\$36.1M

JC₂

\$11.7M

\$22.2M

\$4.7M

H₂C₂



ACQUISITION	PROGRAM EXECUTIVE OFFICER LAND SYSTEMS						
FYDP Investments	FY12	FY13	FY14	FY15	FY16		
RDTE PMC OMMC	\$7.2M \$102.2M \$15.5M	\$9.5M \$26.4M \$19.7M	\$9.1M \$72.2M \$17.2M	\$13.2M \$71.8M \$19.3M	\$10.4M \$39.9M \$19.1M		
DFSA	MRC	BFT	– JCR	JBC-P			
Systems							

\$21.3M

\$16.6M

\$55.7M

JTCW/GCCS/TCO

\$25.7M

\$45.8M

\$2.0M

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	RDTE PMC OMMC	\$7.2M \$102.2M \$15.5M	\$9.5M \$26.4M \$19.7M	\$9.1M \$72.2M \$17.2M	\$13.2M \$71.8M \$19.3M
DFSA		MRC	BFT	– JCR	JBC-

TLDHS

AFATDS

CCS

\$47.1M

\$51.2M

\$71.3M

COC Model F/G

NOTM Increment 1

\$33.8M

\$62.7M

TPS-59 PPM1

\$3.0M

FY17
\$7.4M \$58.3M

\$18.2M

\$28.1M

\$37.8M

\$45.0M

\$8.0M

\$5.5M

\$35.0M





Current Initiatives/Investments

FY12

Tactical Service Oriented Architecture tasks competed on Seaport-e (April, June, September)

- ❖ Handheld Sleeve (July)
- ❖ TPS-59 Radar Maintenance Lifts (June)
- ❖ Rugged Mobile Non-Intrusive Inspection System (RMNIIS) FSR/Spares contract (May)
- ❖ Transition Switch Module (TSM) Fiber Optic Cable upgrade (FY12)
- ❖ SIPR modems (FY12)
- ❖ Full Motion Video (FMV) Exploitation Services (May)
- ❖ Systems Planning Engineering and Evaluation Device (SPEED) (September)





Current Initiatives/Investments

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Future Initiatives/Investments

FY14

Tactical Communications

- Introduction of Mobile User Objective System (MUOS) capability

Digital Fires and Situational Awareness

- Joint Battle Command-Platform Family of Systems (JBC-P FoS)

MAGTF Command and Control

- Trusted Handheld: Leverages the R&D investment of various mobile industries that are responding to commercial demands for secure communications
- TSOA: Identify/develop new software technologies in response to emerging Marine needs for C2 and interoperability

Networking and Satellite Communications

- Voice over Internet Protocol (VoIP) enduring capability

Radars

- Movement to organic maintenance on AN/TPQ-49.
- Overcoming obsolescence issues on Radar systems





Future Initiatives/Investments FY15

Tactical Communications

- Tactical Wideband Handheld Radio capability

Digital Fires and Situational Awareness

- EUD integration of Joint Battle Command-Platform Family of Systems (JBC-P FoS)

MAGTF Command and Control

- Trusted Handheld: Continued efforts
- TSOA: Continued identification and /development of new software technologies in response to emerging Marine needs for C2 and interoperability

Radars

- Technical refresh of the AN/TPS-59 Array Drive Assembly
- AN/TPS-59 MARK XIIA IFF Mode 5
- Technical refresh of AN/TSQ-267 networking and computer equipment





How Industry Can Help Us

Lighten-the-MAGTF / Energy Efficiencies Initiatives

- Virtualization initiatives
- Organic training to reduce FSR footprint
- **❖** COMSEC Modernization
- ❖ Technical Refresh (lighter/more energy efficient replacement)
- ❖ Alternate Power Sources (e.g. Solar)
- **❖** Battery Reduction (Tactical Comms, CIED)

USMC will always be expected to do more with less funding. Industry partners are key and must help USMC keep cost low, technology high and sustainment affordable





How Industry Can Help Us

Technologies

- ❖ Data management, real-time optimization methodologies and algorithms that increase throughout performance within our existing communication infrastructure.
- ❖ Distributed and secure data storage across multiple mobile and static platforms.
- ❖ Innovative and accurate position, location and targeting location when GPS is not available.
- ❖ Reprogrammable multi-purpose software for hand held radio that can be embedded in our current communication infrastructure.

USMC will always be expected to do more with less funding. Industry partners are key and must help USMC keep cost low, technology high and sustainment affordable

Marine Air Ground Task Force (MAGTF) Command, Control and Communications

