Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy											Date: February 2018	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206313M *I Marine Corps Comms Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	1,396.488	141.171	123.825	174.779	16.130	190.909	148.367	104.147	99.277	110.231	Continuing	Continuing
2270: *Exp Indirect Fire Gen Supt Wpn Sys*	269.803	21.557	27.484	19.553	-	19.553	29.568	20.787	20.905	21.371	Continuing	Continuing
2273: *Air Ops Cmd & Control (C2) Sys*	424.214	13.167	14.630	8.467	-	8.467	7.202	6.858	7.003	7.185	Continuing	Continuing
2274: *Command & Control Warfare Sys*	41.483	5.731	8.129	11.992	-	11.992	6.375	7.122	7.258	7.416	Continuing	Continuing
2275: *Marine Corps Tactical Radio Systems*	41.358	14.465	22.722	23.749	-	23.749	14.254	13.387	13.762	14.044	Continuing	Continuing
2276: *Comms Switching and Control Sys*	42.703	1.791	2.799	1.675	-	1.675	1.778	1.815	1.653	1.686	Continuing	Continuing
2277: *System Engineering and Integration*	43.343	4.763	8.314	4.370	-	4.370	13.010	4.930	5.029	5.133	Continuing	Continuing
2278: *Air Defense Weapons System*	46.369	45.058	24.214	73.605	16.130	89.735	40.743	17.724	13.407	27.369	Continuing	Continuing
2510: *MAGTF CSSE & SE*	294.532	5.501	1.518	1.307	-	1.307	2.310	1.468	1.486	1.520	Continuing	Continuing
3099: *Radar System*	180.131	11.729	14.015	16.435	-	16.435	20.977	18.756	18.623	13.921	Continuing	Continuing
3772: *Information Related Capabilities (IRC)*	0.000	0.000	0.000	5.716	-	5.716	4.349	3.311	1.996	2.264	Continuing	Continuing
3773: *Fire Coordination and Sensors*	0.000	0.000	0.000	7.910	-	7.910	7.801	7.989	8.155	8.322	Continuing	Continuing
9999: *Congressional Adds*	12.552	17.409	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.961

A. Mission Description and Budget Item Justification

This program element provides funding to develop the command and control (C2) support and information infrastructures for the Fleet Marine Force and supporting establishment. Doctrinally, the C2 support system and the information infrastructure form two parts of a triad of capabilities which permits command and control systems to be transformed into a complete operating system. The third element of the triad is command and control organization and is not covered in this program element. USMC command and control is divided into seven functional areas and one supporting functional area as follows: intelligence C2, fire support C2, air operations C2, radio systems C2, combat service support C2, warfare C2, radar systems C2, and C2 support (information processing and communications).

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
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Within this program element, subprojects have been grouped by C2 functional area for more efficient planning. Air defense weapons systems have been added to facilitate planning and a separate project is used for systems assigned to the supporting establishment. Subprojects which support the Commander's decision processes have been collected into the Command Post Systems project since these systems must work in close cooperation to ensure effective C2 of Marine Air Ground Task Forces.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	118.146	123.825	95.243	-	95.243
Current President's Budget	141.171	123.825	174.779	16.130	190.909
Total Adjustments	23.025	0.000	79.536	16.130	95.666
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.504	0.000			
• SBIR/STTR Transfer	-3.910	0.000			
• Program Adjustments	5.727	0.000	4.604	-	4.604
• Rate/Misc Adjustments	0.001	0.000	74.932	16.130	91.062
• Congressional General Reductions Adjustments	-0.497	-	-	-	-
• Congressional Directed Reductions Adjustments	-0.800	-	-	-	-
• Congressional Add Adjustments	18.000	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2017	FY 2018
Project: 9999: *Congressional Adds*		
Congressional Add: *Program Increase*	5.803	0.000
Congressional Add: *Radar Enhancements*	11.606	0.000
Congressional Add Subtotals for Project: 9999	17.409	0.000
Congressional Add Totals for all Projects	17.409	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0206313M *I Marine Corps Comms Systems*

Change Summary Explanation

The FY 2019 funding request was reduced by ($.596) million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The funding increase of $67.084M in combined Baseline and OCO funding from FY18 to FY19 can be attributed primarily to Air Defense Weapons System, Command and Control Warfare Systems and Radar Systems.

Exp Indirect Fire Gen Supt Wpn Sys funding decrease reflects transition of Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS) and Target Hand-Off System (THS) from Project C2270 to C3773 Fire Coordination and Sensors in FY19 to reflect US Marine Corps (USMC) Program Management Office (PMO) reorganization to improve support of USMC Operating Forces (OPFOR).

Air Operation Command and Control (C2) System funding decrease reflects transition of Combat Operations Center (COC) from Project C2273 to C2275 Radio Systems in FY19 to reflect USMC PMO reorganization to improve support of USMC OPFOR.

Command and Control Warfare systems increase of $3.863M from FY18 to FY19 supports Multi- Function Electronic Warfare (MFEW) development and additional loadset development for advanced threats.

Tactical Radio Systems increase reflects completion of most NOTM-Airborne (NOTM-A) development and testing. Combat Operations Center (COC) transitions from Project C2273 Air Operation C2 System to C2275 in FY19 to reflect USMC PMO reorganization to improve support of USMC OPFOR.

Communications Switching & Control Systems decrease reflects transition of the Network Planning and Management (NPM) program to sustainment.

Systems Engineering and Integration decrease reflects transition of Marine Civil Information Management System (MARCIMS), Public Affairs Systems (PAS) and Military Information Support Operations (MISO) from Project C2277 to C3772 Information Related Capabilities (IRC) in FY19 to reflect USMC PMO reorganization to improve support of USMC OPFOR.

Air Defense Weapons System $65.521M increase from FY18 to FY19, in combined baseline and OCO funding, reflects the Marine Corps continued urgent need to address emergency war fighting requirements for a Ground Based Air Defense (GBAD) Future Weapons System (FWS) and the Commandant of the Marine Corp (CMC) directed Counter-UAS (C-UAS) assessment, engineering and acquisition efforts to determine and pursue technology solutions required to defeat the full spectrum of threats associated with the Marine Corps Low-Altitude Air Defense mission.

Radar Systems increase of $2.420M from FY18 to FY19 supports enhanced software development for AN/TPS-59 Tactical Ballistic Missile (TBM) detection as well as enhanced data analysis and engineering modeling of threat profiles to support the TBM software enhancements. The FY 2019 funding request was reduced by $9.553M to account for the availability of prior year execution balances.

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Information Related Capabilities (IRC) is a new subproject in FY19 which includes Marine Civil Information Management System (MARCIMS), Public Affairs System (PAS) and Military Information Support Operations (MISO) which transitioned from Project C2277 System Engineering and Integration in FY19 to reflect USMC Program Management Office (PMO) reorganization to improve support of US Marine Corps Operating Forces. IRC capabilities provide the Marine Air Ground Task Force (MAGTF) and the broader Marine Corps the capability to research, understand and affect the information environment, as well as conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, and objective reasoning, to provide an operational advantage.

Fire Coordination and Sensors is a new subproject in FY19 which includes AFATDS and THS from Project C2273 and Family of Target Acquisition Systems (FTAS) from Project C3099 Radar Systems to reflect USMC PMO reorganization to improve support of USMC OPFOR. This project provides capability to automate the fire planning, tactical fire direction, and fire support coordination required to support maneuver from the sea and subsequent operations ashore, as well as the capability to locate, identify, and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. It also provides MAGTF Commanders with the only man-portable target location capability that allows Air Officers and Fire Support Coordinators to prosecute identified targets.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy											Date: February 2018	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*				Project (Number/Name) 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
2270: *Exp Indirect Fire Gen Supt Wpn Sys*	269.803	21.557	27.484	19.553	-	19.553	29.568	20.787	20.905	21.371	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY19, AFATDS FoS and THS funding has been realigned from project 2270, Command Post Systems. Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. This realignment is the primary cause of the funding decrease of $7.931M from FY18 to FY19.

A. Mission Description and Budget Item Justification

Marine Air Ground Task Force (MAGTF) Command and Control (C2) Systems and Applications (MAGTF C2 SA) - MAGTF C2 SA merges the development, integration and testing of 45 existing C2 systems and applications into one common enterprise capability. They reside in all Combat Operations Centers (COCs) and related USMC C2 platforms. This effort provides greater economies of scale/affordability with system developers, technical design agents, integration agents and individual program offices. MAGTF C2 SA efforts are in alignment with the combat developers requirements for: Net-Centric systems, Development of reusable Open Architecture components, Data exposure, Enhancing the Warfighter's Situational Awareness and Increasing/Maximizing the Commander's decision space.

Joint Battle Command - Platform (JBC-P) Family of Systems (FoS) - JBC-P FoS is an Army led ACAT II program of Joint Requirements Oversight Council (JROC) interest, formerly known as the Blue Force Tracker (BFT) FoS. It is comprised of L-Band SATCOM and is a digital, battle command information FoS that provides integrated, on the move, timely, relevant Command and Control Situational Awareness (C2SA) information to tactical combat, combat support and combat service support commanders, leaders, and key C2 nodes. JBC-P FoS will provide JROC mandated C2SA convergence across Combat Operations Centers (COC), ground vehicles and dismounted personnel.

Identity Dominance System-MC (IDS-MC) - IDS-MC is a multi-modal (fingerprint, iris and face) biometric collection system that provides the USMC a reliable and effective capability to collect, share, match, access, verify and store identity information. IDS-MC will enable the Marine to collect appropriate biometric, biographical and reference information on an individual and match this locally developed information with pre-existing information available to the expeditionary force. The system will display match results with linkage to the respective individual's biographical and reference information as well as help analyze the response, update records as appropriate, create reports and disseminate updated information. The primary mission of IDS-MC is to provide the Marine Corps with the means to identify persons encountered in the battle space. While IDS-MC is not an intelligence analysis system, it does provide identification information in support of military intelligence and law enforcement operations by providing positive identification of persons of interest. IDS-MC is an enabler in the areas of detainee management and questioning, base access, counterintelligence screening, border control, law enforcement, displaced persons' management and aiding in humanitarian assistance missions. IDS-MC supports the tactical application of identity dominance and fully supports a forward presence, crisis response and contingency response capability.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

The Expeditionary Forensics and Exploitation Capability (EFEC) provides tactical and operational level forensic technical exploitation capabilities required by Marine Corps forward deployed forces. EFEC provides organic Marine Corps forensic capabilities that support the tactical commander with agile, ruggedized, and scalable expeditionary forensic capabilities that are compatible and fully integrated with joint, other Service, and interagency laboratories, yet also tailored to the unique operating requirements of the maritime domain. Maritime applications include the ability to support Marine Expeditionary Units and ruggedized construction for deployment of sensitive forensic testing and analysis equipment. Through the ability to recognize, protect, collect, analyze, store and share items with forensic value, EFEC positively identifies personnel and trace chemicals/elements; forensically exploits document and media in the commander's area of operation; and scientifically links identities and networks to places, events, and activities. It is a critical enabler to force protection, Counter Improvised Explosive Device, intelligence, targeting and law enforcement operations.

Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS) - AFATDS FoS consists of three programs, AFATDS, Back Up Computer System (BUCS) and Mobile Tactical Shelter (MTS). The AFATDS automates the fire planning, tactical fire direction, and fire support coordination required to support maneuver from the sea and subsequent operations ashore. AFATDS integrates all supporting arms assets within the MAGTF such as mortars, cannon artillery, rockets and missiles, close air support, and naval surface fire support systems. BUCS is a hand-held computer system designed to provide a backup to the AFATDS in computing ballistic firing solutions, as well as provide survey and Meteorological functions in support of artillery. Additionally BUCS is the primary ballistic firing solution system during Ship To Objective Maneuver (STOM) and for the Expeditionary Fire Support System (EFSS). The MTS is a Lightweight Multi-purpose Shelter mounted on a High Mobility Multipurpose Wheeled Vehicle (HMMWV) which protects both the AFATDS and operators from the environment. MTS enables rapid emplacement and displacement of fire support elements and provides networked communications on the move. Realignment of effort to new Project (C3773) in FY 19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.

Target Hand-Off System (THS) - The THS addressed a Marine Corps operational requirement for a lightweight, handheld, and accurate target acquisition engagement coordination system. THS provides MAGTF Commanders with the only man-portable target location capability that allows Air Officers and Fire Support Coordinators to prosecute identified targets. The THS' advance interoperability capability provides the MAGTF Commander with the only portable target acquisition system able to interoperate with all target prosecution platforms available in the battlefield. The THS is designed for the Forward Air Controllers (FACs), Forward Observers (FOs), Fire Support Teams (FSTs), Firepower Control Teams (FCTs), Tactical Air Control Parties (TACPs) and Reconnaissance Teams to quickly acquire targets in day, night and near-all-weather visibility conditions, in order to conduct precise, rapid indirect surface fire support, Naval Surface Fire Support (NSFS) and Close Air Support (CAS). FY19 increase is due to a realignment from PROJECT C2270 to PROJECT C3773. Realignment of effort to new Project in FY 19 and beyond reflects USMC Program Management Office (PMO)reorganization to improve support of USMC OPFOR.

Handheld Command and Control (H2C2) - H2C2 project vision outlines a collective and efficient mobile computing Acquisition Strategy to ensure economies of scale and scope. The H2C2 portfolio consists of two specific capabilities - secure wireless access to multiple networks and handheld communication platforms. The handheld capability provides low cost (commercially available) platforms (smartphones and tablets) for use on every network regardless of the operational environment. The emerging technologies will enable access to both classified and unclassified systems on a single device. The secure wireless capability enables Marines burdened

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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by wired implementations an option to leverage wireless mediums. This capability provides wireless communication between a variety of devices. Starting in FY18, Handheld efforts were re-aligned from JBC-P program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: MAGTF C2: Product Development	6.123	9.548	10.022	0.000	10.022
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue the addition of Authoritative Data Sources from Intelligence, Logistics and Operations to the TSOA in order to meet identified Marine Corps gaps. -Continue improving and enhancing MAGTF interoperability using the service oriented architecture provided by the TSOA. -Continue developing applications for the Marine Corps Software Resource Center to enable more effective information sharing and the ability for Marines to make more informed and timely decisions. -Continue research and development for the deployment of the TSOA to additional Marine Corps platforms (NOTM and MCEITS). - The increase of $2.711M from FY17 to FY18 will fund improvements and enhancements to Software Release, Marine Corps Enterprise Information Technology Services (MCEITS), and Marine Corps Software Resource Center (MCSRC).					
FY 2019 Base Plans: -Continue the addition of Authoritative Data Sources from Intelligence, Logistics and Operations to the TSOA in order to meet identified Marine Corps gaps. -Continue improving and enhancing MAGTF interoperability using the service oriented architecture provided by the TSOA. -Continue developing applications for the Marine Corps Software Resource Center to enable more effective information sharing and the ability for Marines to make more informed and timely decisions. -Continue research and development for the deployment of the TSOA to additional Marine Corps platforms (NOTM and MCEITS). - The increase of $0.474M from FY18 to FY19 will fund improvements and enhancements to Software Release, Marine Corps Enterprise Information Technology Services (MCEITS), and Marine Corps Software Resource Center (MCSRC) and integration, engineering and information assurance of Tactical Service Oriented Architecture (TSOA) software products.					
FY 2019 OCO Plans:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: MAGTF C2: Support Costs	1.207	1.369	1.387	0.000	1.387
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue system engineering support for system integration, configuration management and technical assessments. ***FY 2019 Base Plans:*** - Continue system engineering support for system integration, configuration management, and technical assessments. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: MAGTF C2: Test and Evaluation	1.425	1.659	1.057	0.000	1.057
Articles:	-	-	-	-	-
FY 2018 Plans: -Complete test support for the Joint Tactical Common Operational (COP) Workstation (JTCW). -Continue to participate in technical working groups in support of test and engineering. -Continue to provide technical assistance to other programs supported by Marine Corps Tactical Systems Support Activity (MCTSSA) that involve the use of these systems as well as through the Operating forces Tactical Systems Support Center (OFTSSC) trouble calls ***FY 2019 Base Plans:*** -Continue to participate in technical working groups in support of test and engineering. -Continue to provide technical assistance to other programs supported by Marine Corps Tactical Systems Support Activity (MCTSSA) that involve the use of these systems as well as through the Operating forces Tactical Systems Support Center (OFTSSC) trouble calls. ***FY 2019 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: MAGTF C2: Management Services	1.275	1.300	1.296	0.000	1.296
Articles:	-	-	-	-	-
FY 2018 Plans: Continue to receive software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight from Federally Funded Research and Development Center (FFRDC). ***FY 2019 Base Plans:*** -Continue to receive software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight from Federally Funded Research and Development Center (FFRDC). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: AFATDS: Software Development and Integration	2.029	4.565	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: - Complete development of AFATDS software version 6.8.1.1 P2. - Initiate development of AFATDS software version 7.0. ***FY 2019 Base Plans:*** - See Project C3773. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Beginning in FY19, AFATDS FoS and THS funding has been realigned from project 2270, Command Post Systems. Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. This realignment is the primary cause of the funding decrease of $7.931M from FY18 to FY19.					
Title: AFATDS: Test and Evaluation ***Articles:*** ***FY 2018 Plans:*** - Complete tests to support G/ATOR and PERM Initial Operational Test and Evaluation (IOT&E) of functionality within AFATDS software version 6.8.1.1. P2. - Continue interoperability testing for AFATDS and BUCS software between all required Joint C2 and Fires systems. ***FY 2019 Base Plans:*** - See Project C3773. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, AFATDS FoS and THS funding has been realigned from project 2270, Command Post Systems. Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. This realignment is the primary cause of the funding decrease of $7.931M from FY18 to FY19.	0.435 -	0.305 -	0.000 -	0.000 -	0.000 -
Title: AFATDS: Management Services ***Articles:*** ***FY 2018 Plans:*** - Continue to provide Engineering Support personnel and travel. ***FY 2019 Base Plans:*** - See Project C3773. ***FY 2019 OCO Plans:***	0.650 -	1.011 -	0.000 -	0.000 -	0.000 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, AFATDS FoS and THS funding has been realigned from project 2270, Command Post Systems. Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. This realignment is the primary cause of the funding decrease of $7.931M from FY18 to FY19.					
Title: THS: Product Development ***Articles:*** ***FY 2018 Plans:*** -Continue development of THS V2 software. ***FY 2019 Base Plans:*** See Project C3773. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, AFATDS FoS and THS funding has been realigned from project 2270, Command Post Systems. Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR. This realignment is the primary cause of the funding decrease of $7.931M from FY18 to FY19.	2.420 -	1.661 -	0.000 -	0.000 -	0.000 -
Title: EFEC: Test and Evaluation ***Articles:*** ***FY 2018 Plans:*** N/A ***FY 2019 Base Plans:*** -Initiate coordination with government labs and industry for product testing and integration of Commercial Off-the-Shelf (COTS) capabilities for the EFEC system design. ***FY 2019 OCO Plans:***	0.000 -	0.000 -	0.400 -	0.000 -	0.400 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $0.400M from FY18 to FY19 initiates EFEC product testing and integration efforts.					
Title: IDS-MC: Support	0.709	0.883	0.976	0.000	0.976
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue capability requirements analysis to initiate development for IDS-MC Increment 2 - Continue to develop, assess, and integrate emerging technologies for the IDS-MC Increment 2 integrated system design. ***FY 2019 Base Plans:*** - Continue to develop, assess, and integrate technologies for the IDS-MC Increment 2 integrated system design. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: JBC-P: Software and Product Development/Integration	2.675	1.393	0.295	0.000	0.295
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue coordination with the software and product development teams to assist in the development and integration of the JBC-P software capability and associated testing. -Continue software engineering support to provide appropriate government direction in design and development of software. ***FY 2019 Base Plans:*** -Continue coordination with the software and product development teams to assist in the development and integration of the JBC-P software capability and associated testing. -Continue software engineering support to provide appropriate government direction in design and development of software. ***FY 2019 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $1.098M from FY18 to FY19 is aligned to the schedule for test and evaluation and systems engineering.					
Title: JBC-P: Test and Evaluation	0.921	0.325	0.589	0.000	0.589
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue laboratories integration to facilitate test and network integration test events. ***FY 2019 Base Plans:*** -Continue laboratories integration to facilitate test and network integration test events. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: H2C2: Test and Evaluation	0.000	1.681	1.430	0.000	1.430
Articles:	-	-	-	-	-
FY 2018 Plans: -Initiate test and evaluation efforts for Handheld end user device. ***FY 2019 Base Plans:*** -Continue Test and Evaluation efforts for the Handheld end user device. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: H2C2: Integration Engineering Support	1.688	1.784	2.101	0.000	2.101
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue to develop, design, test, and integrate various emerging capabilities across the H2C2 portfolio.					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Continue to provide support for sustained engagement with various industry providers, quick look technology excursions, and experimentation demonstrations for high risk emerging technology. -Continue support for certification and accreditation efforts for handheld device. ***FY 2019 Base Plans:*** -Continue to develop, design, test, and integrate various emerging capabilities across the H2C2 portfolio. -Continue to provide support for sustained engagement with various industry providers, quick look technology excursions, and experimentation demonstrations for high risk emerging technology. -Continue support for certification and accreditation efforts for handheld device. -Increase of $0.317M from FY18 to FY19 for software development efforts. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	21.557	27.484	19.553	0.000	19.553

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/6438BB: *IDS-MC*	0.496	0.498	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.324
• PMC/4631DD: *AFATDS*	3.596	15.697	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	44.716
• PMC/4631FF: *JBC-P*	40.312	29.740	26.021	-	26.021	8.161	8.336	8.492	8.702	Continuing	Continuing
• PMC/4631GG: *THS*	0.000	22.350	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	33.140
• RDTE/C3773A: *AFATDS*	0.000	0.000	5.606	-	5.606	5.763	5.911	6.042	6.166	Continuing	Continuing
• PMC/4652AA: *IDS-MC*	0.000	0.000	0.971	-	0.971	4.945	1.007	0.000	0.000	Continuing	Continuing
• RDTE/C3773B: *THS*	0.000	0.000	0.678	-	0.678	0.409	0.418	0.426	0.435	Continuing	Continuing
• PMC/4733AA: *THS*	0.000	0.000	24.739	-	24.739	2.439	2.487	2.537	2.588	Continuing	Continuing
• PMC/4733BB: *AFATDS*	0.000	0.000	12.521	-	12.521	12.852	15.531	15.908	16.245	Continuing	Continuing
• PMC/4652BB: *EFEC*	0.000	0.750	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.750
• PMC/4631HH: *H2C2*	0.000	0.000	0.000	-	0.000	11.518	0.000	0.000	0.000	0.000	11.518

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

D. Acquisition Strategy

MAGTF C2 SA: The initial focus is developing the Tactical Service Oriented Architecture (TSOA) software, which provides a common software infrastructure through which services and applications from other programs of record can begin the process of interfacing with in order to maximize software commonality across echelons and missions. The long term goal is a software capability that will enable data discovery and data sharing across mission areas, a common standards-based viewer, core services and applications, and access to the Global Information Grid (GIG) and other Joint networks, data and services.

JBC-P: JBC-P FoS is leveraging the Army's development of the JBC-P. The Marine Corps program is contingent upon the Army's development and acquisition strategy. The Army will fund research and development for JBC-P unless there are Service unique requirements, which the Marine Corps program office will fund. The Marine Corps program office will participate in all design and readiness reviews and joint operational testing events.

Identity Dominance System (IDS): For IDS-MC Increment 1, the Program Office acquisition strategy leveraged the Navy's IDS Program and provided funding to enhance the Navy's system to meet Marine Corps requirements. The Marine Corps program office participated in all design and technical reviews as well as the FOT&E activities. For IDS-MC Increment 2, the Marine Corps Program Office is collaborating with the Army and Navy to leverage market research and technology demonstration data for system hardware and software selection in support of technical refresh. The Marine Corps plans to conduct technology assessments in FY17, conduct PDR and CDR in FY18, MS C in FY19, and Full Deployment Decision (with system procurement) in FY20. and The long-term goal is to equip the Marine with a user-friendly biometric authentication technology that will be employed throughout DoD to deny the enemy freedom of movement within the populace and positively identify known insurgents within an Area of Responsibility (AOR). R&D efforts will be a combined effort with the Navy PM and the USMC for IDS Increment 2, and led by the Marine Corps Program Office.

EFEC: EFEC will use the evolutionary approach for technology insertion and enhancements. For EFEC Increment 2, the Marine Corps will conduct market research and technology demonstrations with industry to replace EFEC Increment 1 hardware and software. The acquisition of components (software/hardware) will maximize the use of existing COTS, Non-Developmental Items, and Government Furnished Equipment for the Information Technology components.

AFATDS: AFATDS is managed through Army CECOM, Aberdeen Proving Ground, MD. R&D efforts for the next AFATDS version will be a combined effort between the software developer, the Army PM, and the USMC for software enhancements through DISA. Current software enhancements are performed at Army, Ft. Sill, OK.

THS: The acquisition of components (software/hardware) for the THS initiative will maximize the use of existing COTS, Government-Off-The-Shelf (GOTS), Non-Developmental Item (NDI), and Government Furnished Equipment (GFE). Software is transitioning to a government owned baseline. Software must maintain compatibility with five Programs of Record (POR) and seven Operational Flight Programs (OFP).

H2C2: H2C2 will use an evolutionary approach for technology insertion. The approach will leverage and mature COTS and NDI technologies to rapidly transition a handheld data capability to other acquisition programs. H2C2 inserts mature technology into existing programs in order to fill capability gaps and requirement shortfalls. These technologies will be inserted at different times along gaining program acquisition cycles. This strategy will apply to available technology at different proposed technology insertion points for each gaining program.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	C/CPFF	SPAWAR : Charleston, SC	50.926	1.598	Jun 2017	5.848	Apr 2018	6.658	Apr 2019	-		6.658	Continuing	Continuing	Continuing
MAGTF C2	WR	NSWC : Dahlgren, VA	11.038	1.086	Feb 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MAGTF C2.	C/CPFF	SPAWAR : San Diego, CA	5.355	1.000	Aug 2017	1.200	Apr 2018	1.000	May 2019	-		1.000	Continuing	Continuing	Continuing
MAGTF C2	WR	SSC A : Charleston, SC	6.593	1.439	Jan 2017	2.000	Feb 2018	1.500	Feb 2019	-		1.500	Continuing	Continuing	Continuing
MAGTF C2	WR	ARL : Washington, DC	1.283	0.700	Jun 2017	0.500	Mar 2018	0.864	Jun 2019	-		0.864	Continuing	Continuing	Continuing
MAGTF C2	C/CPFF	NSWC2 : Dahlgren, VA	0.260	0.300	Jun 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
AFATDS	MIPR	DISA : Belleville, IL	0.000	0.964	Sep 2017	3.893	Mar 2018	0.000		-		0.000	Continuing	Continuing	Continuing
AFATDS	MIPR	Army/SEC : Fort Sill, OK	0.000	1.500	Mar 2017	1.318	Mar 2018	0.000		-		0.000	Continuing	Continuing	Continuing
THS	C/IDIQ	NAVSEA : Washington, DC	0.000	0.331	Mar 2017	0.000		0.000		-		0.000	0.000	0.331	-
THS	WR	NAWC - China Lake : China Lake, CA	0.000	0.754	May 2017	0.000		0.000		-		0.000	0.000	0.754	-
THS	MIPR	AMRDEC : Huntsville, AL	5.413	1.335	Mar 2017	1.661	Mar 2018	0.000		-		0.000	Continuing	Continuing	Continuing
JBC-P	WR	SPAWAR : Charleston, SC	3.211	0.299	Jan 2017	0.287	Dec 2017	0.200	Dec 2018	-		0.200	Continuing	Continuing	Continuing
JBC-P	C/CPFF	SPAWAR2 : Charleston, SC	0.581	0.241	May 2017	0.211	Dec 2017	0.095	Dec 2018	-		0.095	Continuing	Continuing	Continuing
JBC-P	C/CPFF	NSWC2 : Crane, IN	0.211	0.188	Jun 2017	0.386	Dec 2017	0.000		-		0.000	Continuing	Continuing	Continuing
JBC-P	WR	DPSS : China Lake, CA	0.000	0.565	Feb 2017	0.509	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
JBC-P	WR	DPSS2 : China Lake, CA	0.000	1.382	Jul 2017	0.000		0.000		-		0.000	0.000	1.382	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	133.461	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	218.332	13.682		17.813		10.317		-		10.317	Continuing	Continuing	N/A

Remarks

Funding decrease in FY19 is due to AFATDS FoS, FTAS and THS funding being realigned to other RDTEN PRJs in FY19.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	WR	SPAWAR : San Diego, CA	4.948	1.207	Jan 2017	1.369	Feb 2018	1.387	Feb 2019	-		1.387	Continuing	Continuing	Continuing
H2C2 Integration Eng	WR	SPAWAR : Charleston, SC	2.573	0.911	Dec 2016	0.200	Dec 2017	0.575	Dec 2018	-		0.575	Continuing	Continuing	Continuing
H2C2 Integration Eng	C/FFP	SPAWAR : Charleston, SC	0.369	0.295	Dec 2016	0.255	Dec 2017	0.248	Dec 2018	-		0.248	Continuing	Continuing	Continuing
H2C2 Integration Eng	WR	NSWC Crane : Crane, IN	0.626	0.482	Nov 2016	0.295	Nov 2017	0.301	Nov 2018	-		0.301	Continuing	Continuing	Continuing
H2C2 Integration Eng	WR	NSWC China Lake : China Lake, CA	0.615	0.000		0.819	Dec 2017	0.860	Dec 2018	-		0.860	Continuing	Continuing	Continuing
H2C2 Integration Eng	C/CPFF	NSWC Crane2 : Crane, IN	0.060	0.000		0.115	Jun 2018	0.117	Jun 2019	-		0.117	Continuing	Continuing	Continuing
H2C2 Integration Eng	Various	MCSC : Stafford, VA	0.100	0.000		0.100	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
IDS-MC	C/FFP	MITRE : Mc Lean, Va	0.000	0.148	Feb 2017	0.000		0.000		-		0.000	0.000	0.148	-
IDS-MC	WR	SPAWAR : Charleston, SC	0.036	0.520	Nov 2016	0.883	Mar 2018	0.976	Nov 2018	-		0.976	Continuing	Continuing	Continuing
IDS-MC	C/FFP	NSWC Dahlgren : Dahlgren, VA	0.000	0.041	Mar 2017	0.000		0.000		-		0.000	0.000	0.041	-
Prior Years Cumulative Funding	Various	Various : Various	10.078	0.000		0.000		0.000		-		0.000	0.000	10.078	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	19.405	3.604		4.036		4.464		-		4.464	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	WR	NRL : Washington, DC	2.333	0.825	Jun 2017	0.859	Feb 2018	0.500	Jun 2019	-		0.500	Continuing	Continuing	Continuing
MAGTF C2	C/ FFPLOE	MCTSSA. : Camp Pendleton, CA	2.891	0.600	Jun 2017	0.800	Jan 2018	0.557	Apr 2019	-		0.557	Continuing	Continuing	Continuing
JBC-P	C/CPFF	MCTSAA : Camp Pendleton, CA	1.198	0.287	Dec 2016	0.235	Mar 2018	0.296	Dec 2018	-		0.296	Continuing	Continuing	Continuing
JBC-P	MIPR	DISA/JITC : Ft Huachuca, AZ	0.253	0.000		0.090	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
JBC-P	WR	NSWC Corona4 : Norco, CA	0.000	0.289	Feb 2017	0.000		0.166	Feb 2019	-		0.166	0.000	0.455	-
JBC-P	C/FFP	NSWC Corona 5 : Norco, CA	0.000	0.345	Jun 2017	0.000		0.127	Jun 2019	-		0.127	0.000	0.472	-
H2C2	WR	SPAWAR1 : Charleston, SC	0.000	0.000		0.335	Dec 2017	0.341	Dec 2018	-		0.341	0.000	0.676	-
H2C2	WR	NSWC Corona : Norco, CA	0.000	0.000		0.865	Dec 2017	0.435	Dec 2018	-		0.435	0.000	1.300	-
H2C2	C/FFP	SPAWAR2 : Charleston, SC	0.000	0.000		0.200	Dec 2017	0.203	Dec 2018	-		0.203	0.000	0.403	-
H2C2	C/FFP	NSWC Corona : Norco, CA	0.000	0.000		0.200	Dec 2017	0.203	Dec 2018	-		0.203	0.000	0.403	-
H2C2	WR	NSWC China Lake : China Lake, CA	0.000	0.000		0.081	Dec 2017	0.248	Dec 2018	-		0.248	0.000	0.329	-
EFEC	WR	SPAWAR3 : Charleston, SC	0.000	0.000		0.000		0.400	Nov 2018	-		0.400	0.000	0.400	-
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	15.688	0.000		0.000		0.000		-		0.000	0.000	15.688	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	22.363	2.346		3.665		3.476		-		3.476	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	C/CPFF	CECOM/MITRE : Ft. Monmouth, NJ	6.252	1.275	Jun 2017	1.300	Dec 2017	1.296	Jun 2019	-		1.296	Continuing	Continuing	Continuing
AFATDS	C/CPFF	CECOM/MITRE : Ft. Monmouth, NJ	0.160	0.650	Jan 2017	0.670	Jan 2018	0.000		-		0.000	0.000	1.480	-
Prior Years Cumulative Funding	Various	Various : Various	3.291	0.000		0.000		0.000		-		0.000	0.000	3.291	-
		Subtotal	9.703	1.925		1.970		1.296		-		1.296	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	269.803	21.557		27.484		19.553		-		19.553	Continuing	Continuing	N/A

Remarks

Funding decrease in FY19 is due to AFATDS FoS, FTAS and THS funding being realigned to other RDTEN PRJs in FY19.

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

MAGTF C2 Schedule

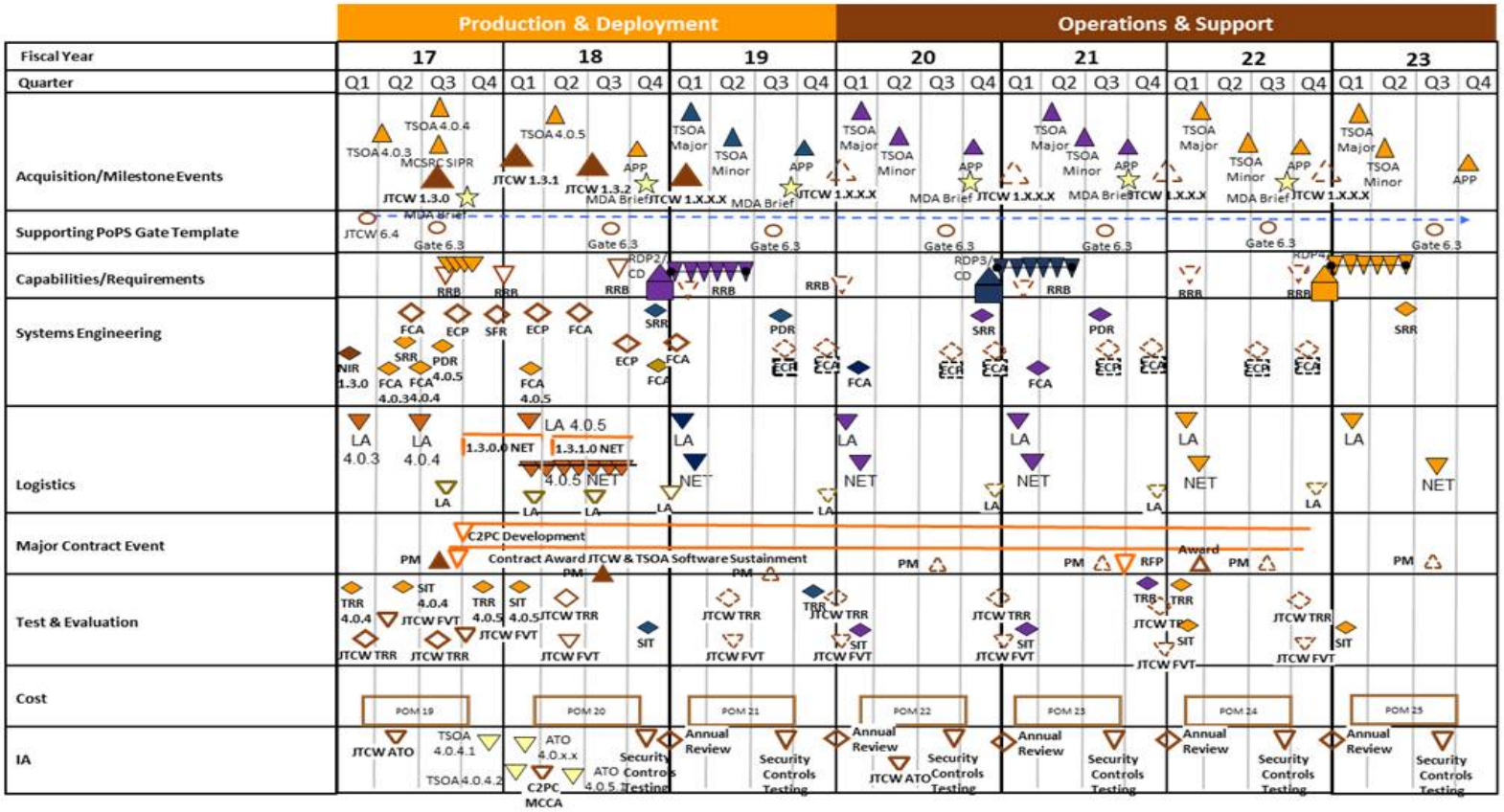

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Hand Held Command and Control (H2C2) Program Schedule

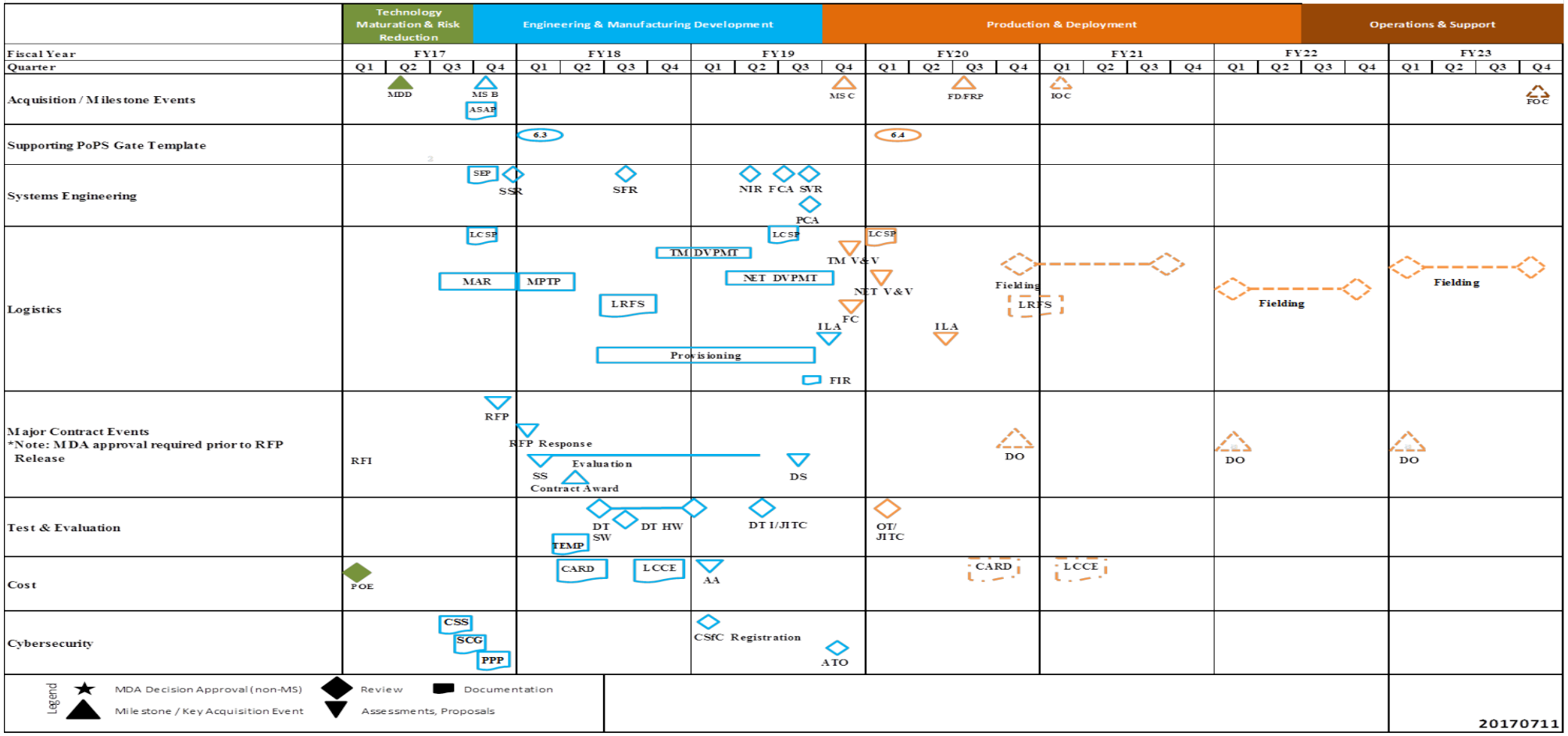

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

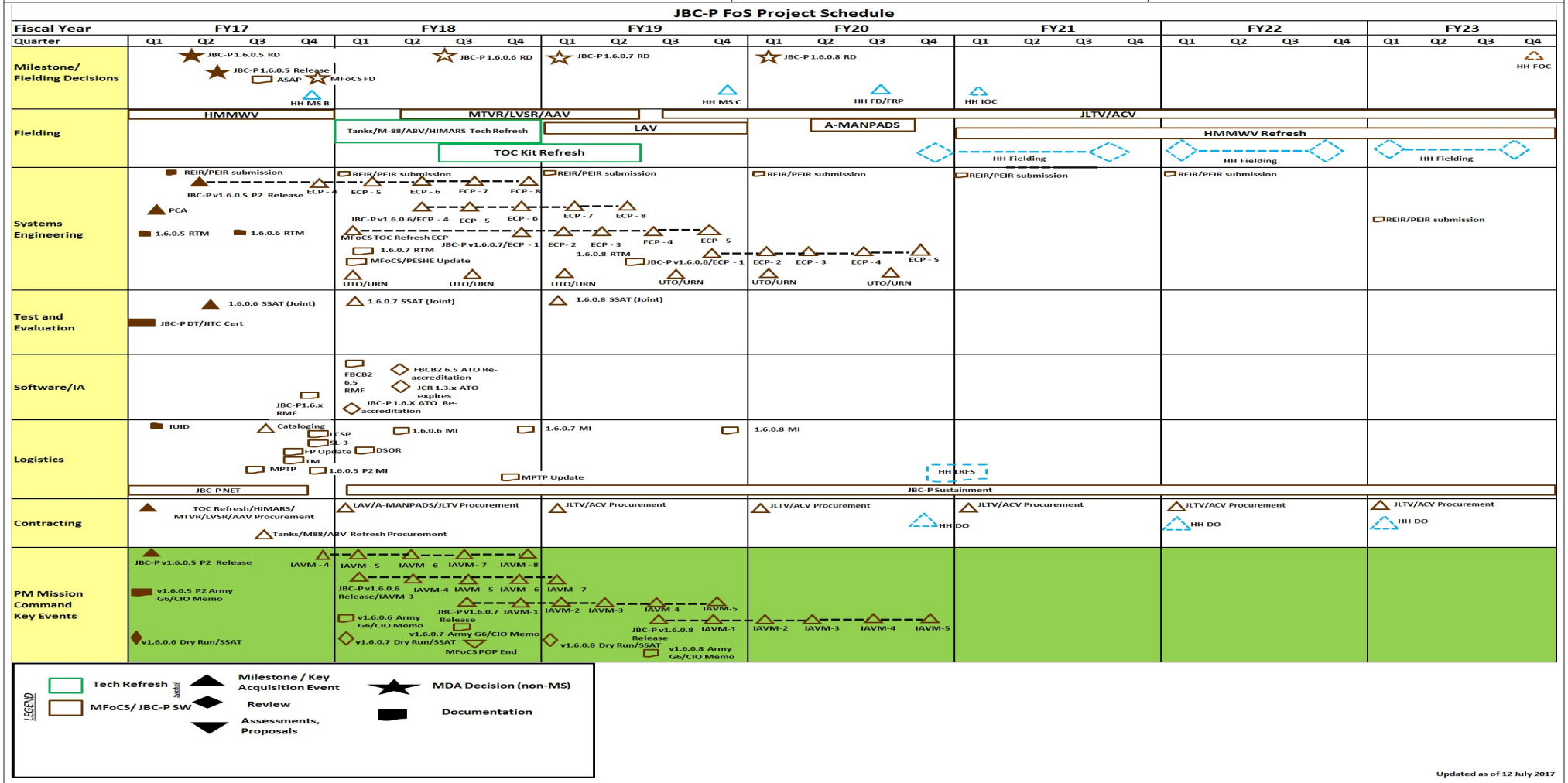

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

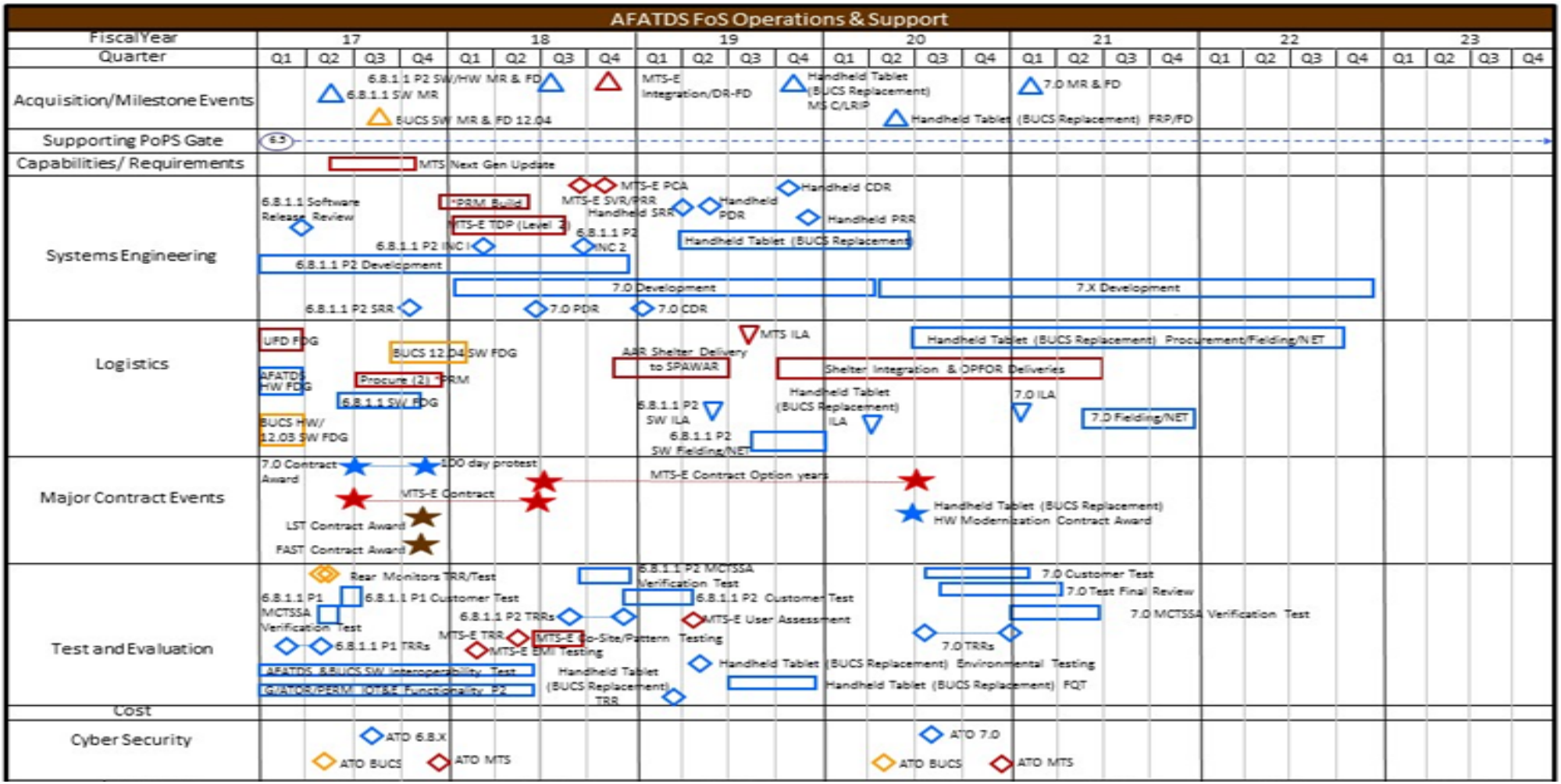

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Identity Dominance System – Marine Corps (IDS-MC) Program Schedule

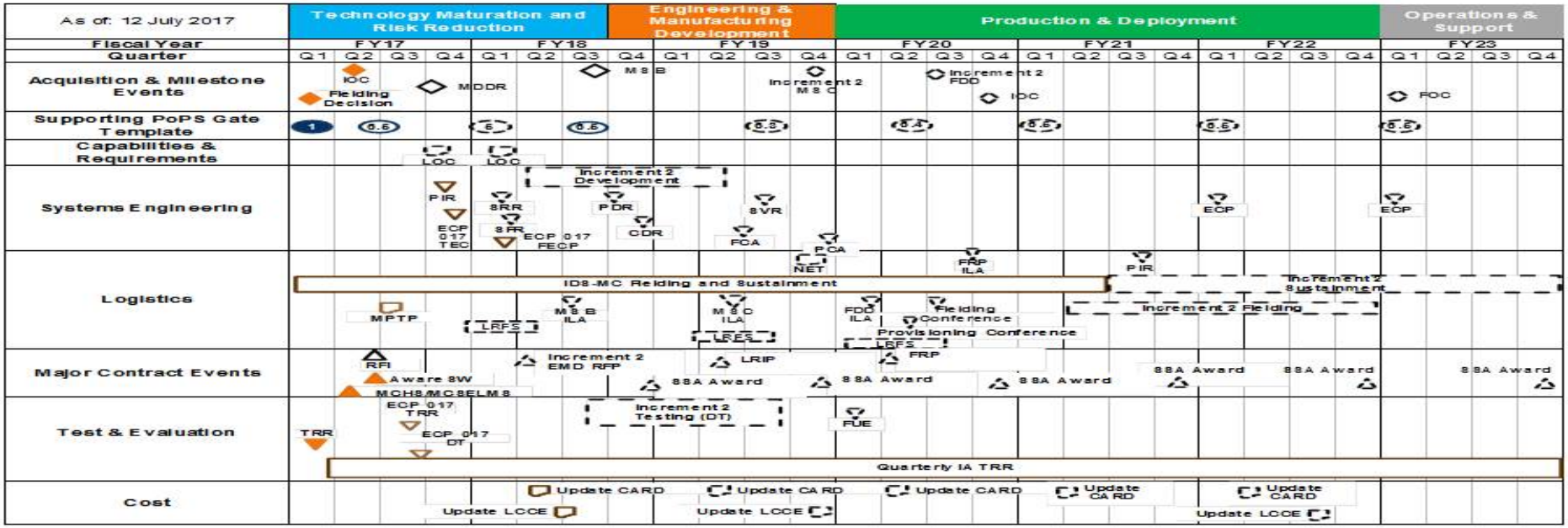

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

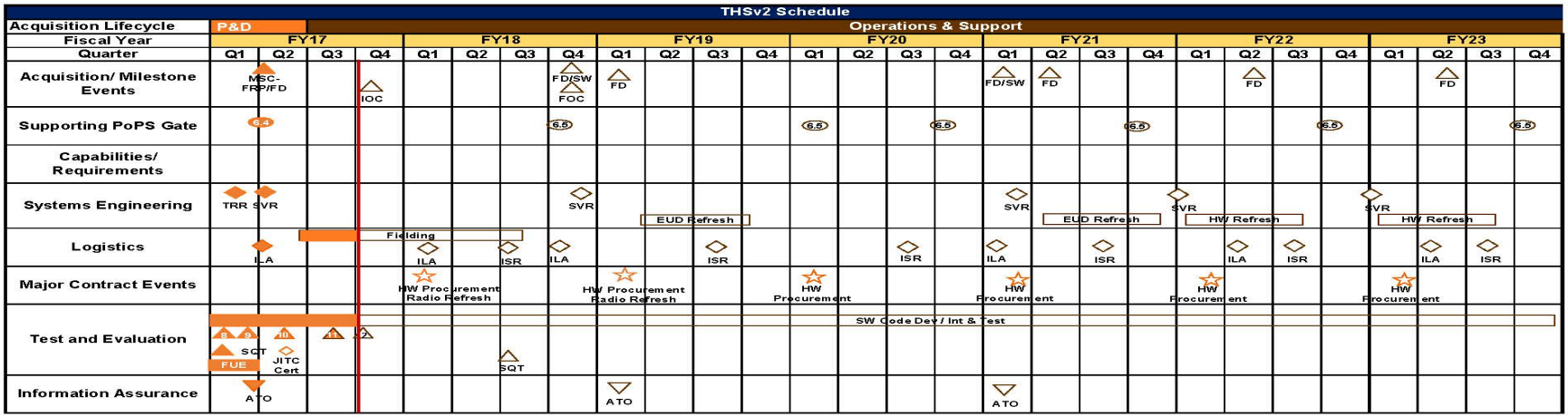

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Expeditionary Forensic Exploitation Capability (EFEC) Program Schedule

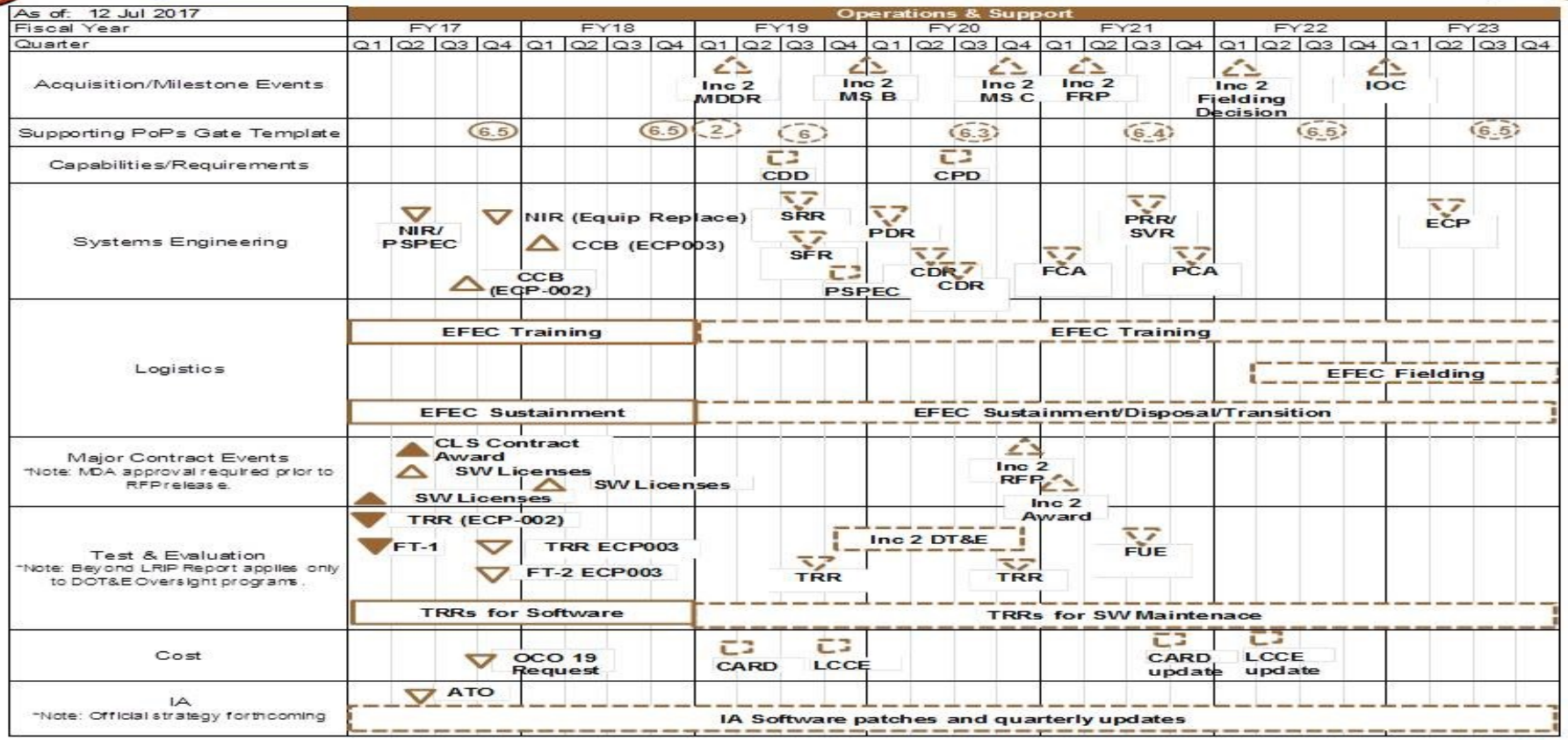

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2270				
MAGTF C2 Contract Award Software Sustainment	3	2017	3	2017
MAGTF C2 SIT 1	1	2018	1	2018
MAGTF C2 TSOA 4.0.5	2	2018	2	2018
MAGTF C2 SIT 2	4	2018	4	2018
MAGTF C2 TSOA Major	1	2019	1	2019
MAGTF C2 TSOA Minor	2	2019	2	2019
MAGTF C2 PDR	3	2019	3	2019
MAGTF C2 APP	4	2019	4	2019
MAGTF C2 TRR	4	2019	4	2019
JBC-P FoS Platform Fielding - MTVR, LVSR, AAV	2	2018	2	2019
JBC-P FoS TOC Kit Refresh Fielding	3	2018	3	2019
JBC-P FoS Platform Fielding - LAV	1	2019	4	2019
JBC-P FoS Platform Fielding - JLTV, ACV	3	2019	4	2023
H2C2 DT SW	2	2018	2	2018
H2C2 DT HW	3	2018	3	2018
H2C2 MS C	4	2019	4	2019
IDS-MC Increment 1 Fielding Decision	1	2017	1	2017
IDS-MC Initial Operational Capability (IOC)	2	2017	2	2017
IDS-MC Tech Refresh Development	2	2018	2	2019
IDS-MC MS B	3	2018	3	2018
IDS-MC MS C	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
IDS-MC FDD	3	2020	3	2020
EFEC Inc 2 MDDR	1	2019	1	2019
EFEC TRR	3	2019	3	2019
EFEC Inc 2 MS B	4	2019	4	2019
EFEC MS C	4	2020	4	2020
EFEC FRP	1	2021	1	2021
EFEC Fielding Decision	1	2022	1	2022

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2273 / *Air Ops Cmd & Control (C2) Sys*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
2273: *Air Ops Cmd & Control (C2) Sys*	424.214	13.167	14.630	8.467	-	8.467	7.202	6.858	7.003	7.185	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY19, Combat Operations Center (COC) has be realigned from Project C2273 to C2275, Radio Systems, to support US Marine Corps (USMC) Program Management Office (PMO) reorganization to improve support of USMC Operating Forces (OPFOR).

A. Mission Description and Budget Item Justification

Combat Operations Center (COC) - AN/TSQ-239 (V)1-4 are a deployable, self-contained, modular, centralized and scalable facility ((V)1 MEF-size, (V)2 MSC/Div-size, (V)3 Regiment-size, (V)4 Battalion-size) which provides digital, shared Command and Control/Situational Awareness functionalities to enhance the Common Operational Picture (COP) for the Command Element, Ground Command Element, Air Combat Element, and Logistics Combat Element. It is a commercial-off-the-shelf integrated hardware solution using unit provided radios, re-hosted tactical data systems, and available Marine Corps prime movers to transport the system. Funds support testing and Information Assurance (IA) certification activities, integration of emerging technology, and On The Move (OTM) capabilities. COC transitions from Project C2273 to Project C2275 in FY19.

Composite Tracking Network (CTN) - Provides a ground based sensor netting solution that significantly improves situational awareness by correlating sensor measurement data (target position, speed, heading, Identification Friend and Foe (IFF), etc.) from local and remote radars in the Cooperative Engagement Capability (CEC) network. This data is then provided to the warfighter in the form of composite, real-time, air surveillance tracks to the Marine Air Command and Control node and is integral in providing an accurate representation of the airspace to reduce ground to air and air to air fratricide, facilitate more effective integration of air and surface fires, extend the air defensive capability of the Naval force in the littorals and enable integrated fire control (IFC) for the Marine Corps.

Remote Video Viewing Terminal (RVVT) - Consists of Commercial Off-The-Shelf (COTS) Video Down-Link (VDL) products such as the VideoScout Mobile Configuration 2 (VS-MC/2), VideoScout Mobile Configuration 3 (VS-MC/3), Man Portable Video Down-Link (MPVDL) that allow for the viewing and exploitation of Full Motion Video (FMV) from Intelligence, Surveillance and Reconnaissance (ISR) assets. VDL systems are mission critical for coordination of direct and indirect fires and the prevention of fratricide. These systems provide the warfighter with video and metadata from all USMC manned and unmanned aircraft to include but not limited to Raven B, Puma, Micro-UAS, Shadow, Predator, Fire Scout, and Litening Pod on P-3, AV8-B, and F/A-18. Data is displayed to Forward Observers (FO), Joint Fires Observers (JFO), Joint Terminal Attack Coordinators (JTAC), and Forward Air Controller (FAC).

Theater Battle Management Core System (TBMCS) - Joint mandated Air War planning tool for the generation, dissemination and execution of the Air Tasking Order (ATO). TBMCS is an Air Force led program, which provides the automated tools necessary to manage tactical air operations, execute area air defense and airspace management in the tactical area of operation, and coordinate operations with components of other military services. TBMCS is located at the Tactical Air Command Center (TACC), with remotes located throughout the area of operation. It is scalable, allowing for joint, coalition and service specific operations. It is an evolutionary

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

acquisition program. USMC has initiated funding in support of Air Force led Command and Control Air Operation System - Command and Control Information Services (C2AOS-C2IS) requirements. The decrease of $0.796M from FY 2018 to FY 2019 is largely due to the completion of C2AOS-C2IS tactical map software development in FY 2018. USMC is funding participation in the Air Force's test events to ensure USMC requirements are being implemented as Command and Control Air Operation System - Command and Control Information Services (C2AOS-C2IS) will be the replacement for Air Force TBMCS. C2AOS-C2IS - is an ACAT III, post Milestone B, Air Force led program. C2AOS-C2IS will bring increased capability to the Operating Forces with a modern services based infrastructure and modern applications. C2AOS-C2IS provides additional tools to conduct: Situational Awareness and Assessment; Airspace De-confliction; Execution Management and Re-planning; Close Air Support; Targeting/Weaponeering; and Time Critical Targeting. Software development and sustainment keeps Marine Aviation relevant and operational in a joint theater. USMC risk reduction efforts include conducting Critical Analysis/Map Abstraction Layer implementation and assessment and Risk Reduction Testing.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: COC: Continued Capability Solution	1.077	4.446	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue testing and software integration efforts needed to align with other C2 systems. -Complete market research for hardware refresh. -Increase of $2.526 from FY17 to FY18 for testing and software integration efforts to address end-of-life obsolescence issues and alignment with other C2 systems. ***FY 2019 Base Plans:*** -In FY19 COC funding is realigned to project 2275. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, Combat Operations Center (COC) has be realigned from Project C2273 to C2275, Radio Systems, to support US Marine Corps (USMC) Program Management Office (PMO) reorganization to improve support of USMC Operating Forces (OPFOR).					
Title: COC: Management Services	2.448	0.917	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue engineering support for system optimization and system enhancements. ***FY 2019 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-In FY19 COC funding is realigned to project 2275. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, Combat Operations Center (COC) has be realigned from Project C2273 to C2275, Radio Systems, to support US Marine Corps (USMC) Program Management Office (PMO) reorganization to improve support of USMC Operating Forces (OPFOR).					
Title: Composite Tracking Network (CTN): Support and Management Services	0.746	0.262	0.208	0.000	0.208
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue systems engineering efforts and updates to the software baseline. - Continue travel, engineering support, and test support. ***FY 2019 Base Plans:*** - Continue systems engineering efforts and updates to the software baseline. - Continue travel, engineering support, and test support. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: Composite Tracking Network (CTN): Engineering Development	2.928	1.117	1.215	0.000	1.215
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue software certification to maintain interoperability with Cooperative Engagement Capability (CEC) Network to include associated engineering support. - Continue Independent Verification and Validation support as well as Information Assurance (IA) tactical side hardening regression testing. ***FY 2019 Base Plans:*** - Continue software certification to maintain interoperability with Cooperative Engagement Capability (CEC) Network to include associated engineering support.					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Provide engineering support for CTN Software Development and Integration, CTN System Verification Testing, and Joint testing and certification efforts required to support the G/ATOR Mode V and CTN interface. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The CTN Engineering Development increase of $0.098M from FY 2018 to FY 2019 relates to engineering support required for CTN Software Development and Integration, CTN System Verification Testing, and Joint testing and certification efforts required to support the G/ATOR Mode V and CTN interface.					
Title: RVVT: Preparation ***Articles:*** ***FY 2018 Plans:*** - Continue the development and integration of software to ensure full motion video compatibility across the spectrum of weapons and targeting platforms that receive and transmit the data. ***FY 2019 Base Plans:*** - Continue the development and integration of software to ensure full motion video compatibility across the spectrum of weapons and targeting platforms that receive and transmit the data. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.	0.157 -	1.158 -	1.141 -	0.000 -	1.141 -
Title: Composite Tracking Network (CTN): Developmental Testing and Cyber Security ***Articles:*** ***FY 2018 Plans:*** - Continue integration and interoperability developmental testing with CAC2S, G/ATOR, and the TPS-59 Mode V. - Continue Information Assurance (IA) developmental activities. - Conduct CAB-E Formal Qualification Test (FQT) and Field User Evaluation (FUE) test events. - Initiate CTN Independent Verification and Validation (IV&V) testing to include associated engineering support.	1.962 -	0.764 -	0.733 -	0.000 -	0.733 -

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Conduct developmental tests in support of Common Array Block-Expeditionary (CAB-E) to include associated engineering support. ***FY 2019 Base Plans:*** - Continue integration and interoperability developmental testing with CAC2S, G/ATOR, and the TPS-59 Mode V. - Continue Information Assurance (IA) developmental activities. - Continue CTN Independent Verification and Validation (IV&V) testing to include associated engineering support. - Initiate G/ATOR Mode V Integration and Testing beginning 2Q FY 2019. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: C2AOS-C2IS Product Development ***Articles:*** ***FY 2018 Plans:*** - Develop and assess tactical map software to interface with C2AOS-C2IS. ***FY 2019 Base Plans:*** Decrease of $0.445M from FY 2018 to FY 2019 due to the completion of tactical map software development with C2AOS-C2IS in FY 2018. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $0.445M from FY 2018 to FY 2019 due to the completion of tactical map software development with C2AOS-C2IS in FY 2018.	0.000 -	0.445 -	0.000 -	0.000 -	0.000 -
Title: C2AOS-C2IS Support ***Articles:*** ***FY 2018 Plans:***	0.000 -	0.324 -	0.314 -	0.000 -	0.314 -

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Initiate critical analysis efforts with C2AOS-C2IS applications in support of risk reduction testing, developmental test, and operational test. ***FY 2019 Base Plans:*** - Continue critical analysis efforts with C2AOS-C2IS applications in support of Air Force led multiservice operational test and evaluation. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: C2AOS-C2IS Test and Evaluation ***Articles:*** ***FY 2018 Plans:*** - Initiate information assurance testing on developmental software to determine the cyber security posture and conduct risk reduction testing to identify potential vulnerabilities. - Initiate USMC support of Air Force C2AOS-C2IS Joint Partner testing. - Conduct Regression Testing of tactical map software interface. - Initiate test support efforts to Air Force led Integrated Developmental Test, Integrated Developmental Test Regression Test and Operational Tests. ***FY 2019 Base Plans:*** - Participate in Air Force led Multiservice Operational Test and Evaluation (MOT&E) test event to ensure USMC requirements are addressed. - Continue information assurance testing on developmental software to determine the cyber security posture and conduct risk reduction testing to identify potential vulnerabilities. - Continue USMC support of Air Force C2AOS-C2IS Joint Partner testing. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.	0.000 -	1.674 -	1.529 -	0.000 -	1.529 -
Title: C2AOS-C2IS Management Services	0.000	0.546	0.396	0.000	0.396

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Articles:	-	-	-	-	-
FY 2018 Plans: - Initiate management support efforts to participate in the development of C2AOS-C2IS and Air Force led test events to ensure USMC requirements are addressed. ***FY 2019 Base Plans:*** Decrease of $0.150M from FY 2018 to FY 2019 due to reduction of required program support. - Continue management support efforts to participate in the development of C2AOS-C2IS and Air Force led test events to ensure USMC requirements are addressed. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: TBMCS - Software Development Support	3.849	2.977	2.931	0.000	2.931
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue test and evaluation support for TBMCS upgrades for Joint Interoperability. -Continue development test and evaluation support of USMC developed software releases which support the software baseline for Cyber Security upgrades as well as conduct annual Cyber Security Accreditation. ***FY 2019 Base Plans:*** -Continue test and evaluation support for TBMCS upgrades for Joint Interoperability. -Continue development test and evaluation support of USMC developed software releases which support the software baseline for Cyber Security upgrades as well as conduct annual Cyber Security Accreditation. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	13.167	14.630	8.467	0.000	8.467

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/4640CT: *CTN*	1.515	5.360	5.455	-	5.455	4.459	0.000	0.000	0.000	0.000	68.610
• PMC/4640CU: *MACCS*	0.434	2.662	0.050	-	0.050	0.051	0.052	0.053	0.054	0.000	96.809
• PMC/4640DX: *TBMCS*	3.720	1.902	1.477	-	1.477	1.477	1.304	1.333	1.374	Continuing	Continuing
• PMC/464023: *RVVT*	10.248	8.469	7.287	-	7.287	5.874	5.894	6.198	6.377	Continuing	Continuing
• PMC/463100: *COC*	2.103	10.188	5.768	-	5.768	8.083	11.733	11.979	12.226	Continuing	Continuing

Remarks

D. Acquisition Strategy

TBMCS - is an ACAT III, Air Force led program with joint interest/oversight. USMC will continue following the Air Force lead when fielding only the joint modules of TBMCS. As USMC unique requirements are identified the USMC will deviate accordingly to sufficiently sustain systems. Over the course of the FYDP, TBMCS is to separately manage the development and fielding of software and hardware engineering change proposals for Information Assurance (IA) and functionality updates to ensure daily direct support of the Air Battle Plan in joint theaters of operation. The Air Force is in the process of transitioning TBMCS to C2AOS-C2IS. C2AOS-C2IS is an ACAT III, Air Force led joint interest program and identified as a viable replacement of TBMCS. C2AOS-C2IS is currently in development by the Air Force with an anticipated Full Deployment Decision (FDD) 4th quarter FY 2019. The USMC C2AOS-C2IS strategy is to support and participate in the Air Force led FY 2019 joint test events, implementation of a tactical map interface, and conduct risk reduction testing in order to ensure the USMC remains aligned with the Air Force mandated testing and fielding schedules.

CTN - The USMC's CTN acquisition strategy is to participate in the USN's Cooperative Engagement Capability (CEC) program procurement and testing, making necessary modifications to support the Marine Corps' requirement. The next major efforts are the development and procurement of the Common Array Block-Expeditionary (CAB-E) Antenna to replace the Composite Solid State Antenna (CSSA), which will become obsolete in FY 2018, and completion of interfaces with Ground/Air Task Oriented Radar (G/ATOR) and CAC2S.

RVVT - The RVVT acquisition strategy is to continually improve the Video Down-Link (VDL) products by enhancing the encryption, range, and reducing the power and weight requirements through competition. Efforts to integrate Full Motion Video (FMV) to support Joint Fires Observers (JFOs) and Joint Terminal Attack Controllers (JTACs) began in FY 2017.

COC - The COC AN/TSQ-239 (V)1-4 is the foundation of USMC C2, meeting near term communications and network requirements across the OpFor. There is a continuing developmental effort to evolve the COC into a fully integrated MAGTF C2 capability. FY 2017 and FY 2018 continues to maintain industry standard and interoperability with disparate C2 systems across the joint forces.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	256.411	0.000		0.000		0.000		-		0.000	0.000	256.411	-
CTN Engineering Devlopment	C/CPFF	NAVSEA PEO IWS : Washington, DC	19.152	2.928	May 2017	1.117	Feb 2018	1.215	Feb 2019	-		1.215	Continuing	Continuing	Continuing
COC	WR	NSWC : Dahlgren,VA	5.684	0.307	Feb 2017	1.240	Feb 2018	0.000		-		0.000	0.000	7.231	-
COC	C/CPIF	NSWC : Dahlgren, VA	0.130	0.108	Apr 2017	1.706	Feb 2018	0.000		-		0.000	0.000	1.944	-
COC	WR	SSC-LANT : Charleston, SC	1.279	0.379	Feb 2017	1.315	Feb 2018	0.000		-		0.000	0.000	2.973	-
COC	C/CPIF	SSC-Lant2 : Charleston, SC	0.000	0.283	Jun 2017	0.185	Jan 2018	0.000		-		0.000	0.000	0.468	-
RVVT	MIPR	ARDEC : Picatinny, NJ	1.334	0.000		0.000		0.000		-		0.000	0.000	1.334	-
C2AOS-C2IS Tactical Map Software Development	SS/FFP	Raytheon Solypsis : Fulton, MD	0.000	0.000		0.445	Dec 2017	0.000		-		0.000	0.000	0.445	-
RVVT	MIPR	AMRDEC : Huntsville, AL	1.008	0.157	Mar 2017	1.158	Mar 2018	1.141	Mar 2019	-		1.141	0.000	3.464	-
		Subtotal	284.998	4.162		7.166		2.356		-		2.356	Continuing	Continuing	N/A

Remarks

Reduction of $4.810M reflects movement of COC to RDTEN PRJ C2275.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	47.558	0.000		0.000		0.000		-		0.000	0.000	47.558	-
CTN Engineering Support	WR	NSWC : Dahlgren, VA	5.588	0.682	Jan 2017	0.215	Jan 2018	0.200	Jan 2019	-		0.200	Continuing	Continuing	Continuing
CTN Engineering Support	WR	NSWC : PHD, CA	0.569	0.040	Feb 2017	0.033	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CTN Engineering Support	Various	Travel-TAD : Not Specified	1.100	0.024	Sep 2017	0.014	Sep 2018	0.008	Sep 2019	-		0.008	Continuing	Continuing	Continuing
C2AOS-C2IS Engineering Support	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.324	Dec 2017	0.314	Dec 2018	-		0.314	0.000	0.638	-
		Subtotal	54.815	0.746		0.586		0.522		-		0.522	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	40.227	0.000		0.000		0.000		-		0.000	0.000	40.227	-
TBMCS Software Development	C/FFP	Lockheed Martin : Colorado Springs, CO	9.528	3.849	Mar 2017	2.977	Mar 2018	2.931	Mar 2019	-		2.931	Continuing	Continuing	Continuing
CTN Developmental Testing	WR	NSWC Corona : Corona, CA	1.557	0.628	Feb 2017	0.325	Feb 2018	0.312	Feb 2019	-		0.312	0.000	2.822	-
CTN Engineering/Cyber Security Development	C/CPFF	NAVSEA PEO IWS : Washington DC	0.333	1.334	Jan 2017	0.439	Jan 2018	0.421	Jan 2019	-		0.421	0.000	2.527	-
C2AOS-C2IS Operational Test Support	WR	MCOTEA : Quantico, VA	0.000	0.000		0.939	Dec 2017	0.788	Dec 2018	-		0.788	0.000	1.727	-
C2AOS-C2IS Developmental Test Support	C/FFP	TBD : TBD	0.000	0.000		0.315	Jan 2018	0.327	Jan 2019	-		0.327	0.000	0.642	-
C2AOS-C2IS Cyber Security Training	MIPR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.420	Dec 2017	0.414	Dec 2018	-		0.414	0.000	0.834	-
		Subtotal	51.645	5.811		5.415		5.193		-		5.193	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	28.671	0.000		0.000		0.000		-		0.000	0.000	28.671	-
COC Engineering Support	FFRDC	U.S. Army, MITRE : Stafford, VA	4.085	2.448	Mar 2017	0.917	Mar 2018	0.000		-		0.000	0.000	7.450	-
C2AOS-C2IS Program Support	C/FFP	TBD : TBD	0.000	0.000		0.546	Apr 2018	0.396	Apr 2019	-		0.396	0.000	0.942	-
		Subtotal	32.756	2.448		1.463		0.396		-		0.396	0.000	37.063	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	424.214	13.167		14.630		8.467		-		8.467	Continuing	Continuing	N/A

Remarks

The total decrease of $6.156M from FY 2018 to FY 2019 is primarily due to the realignment of COC funding to project 2275. Realignment of efforts to new BLIs in FY 19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

TBMCS Program Schedule

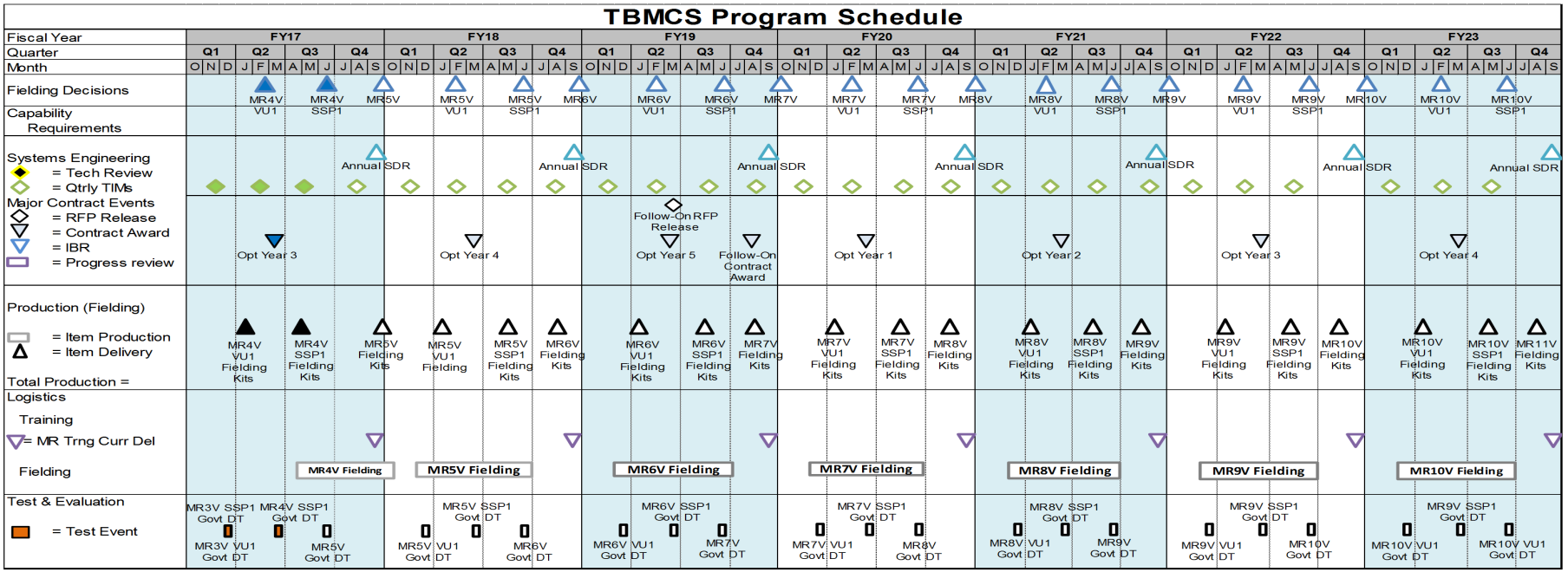

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

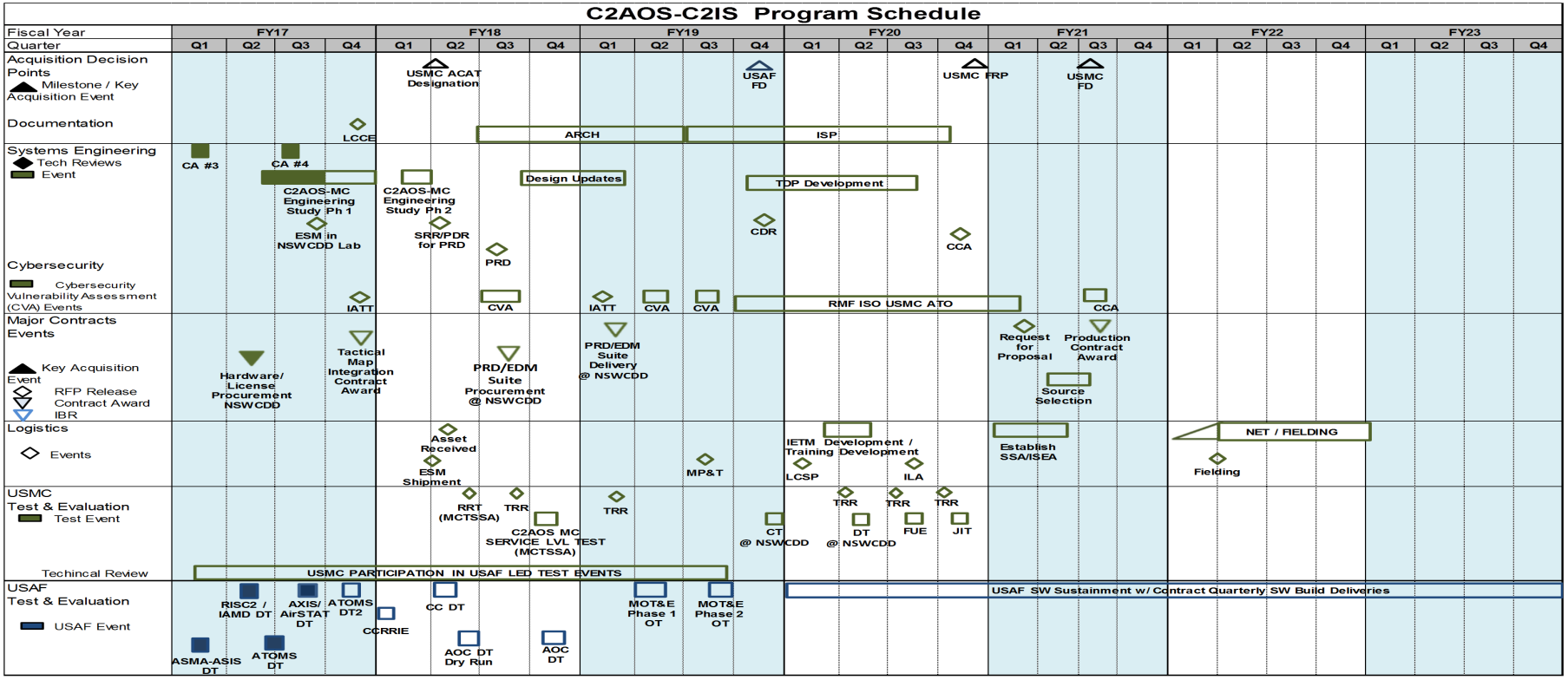

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

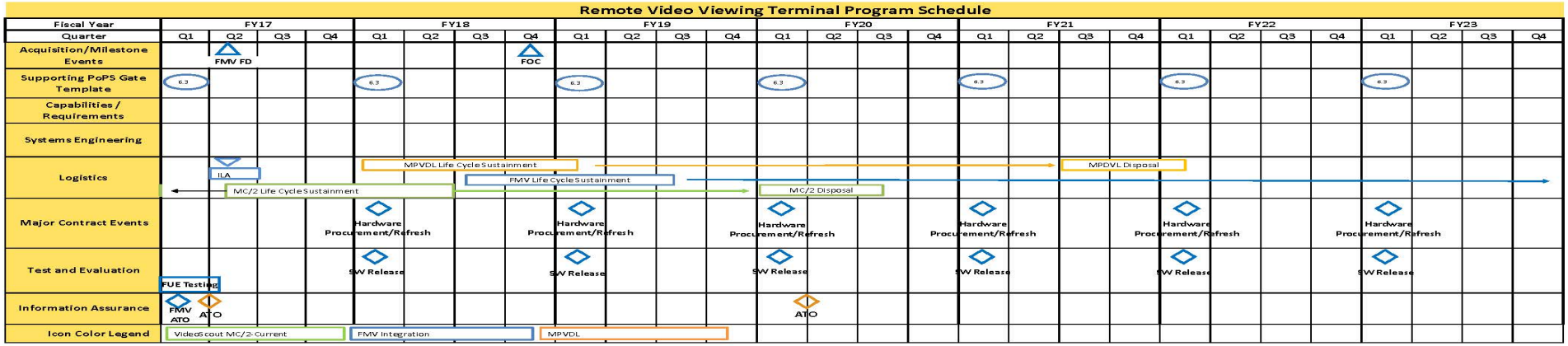

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

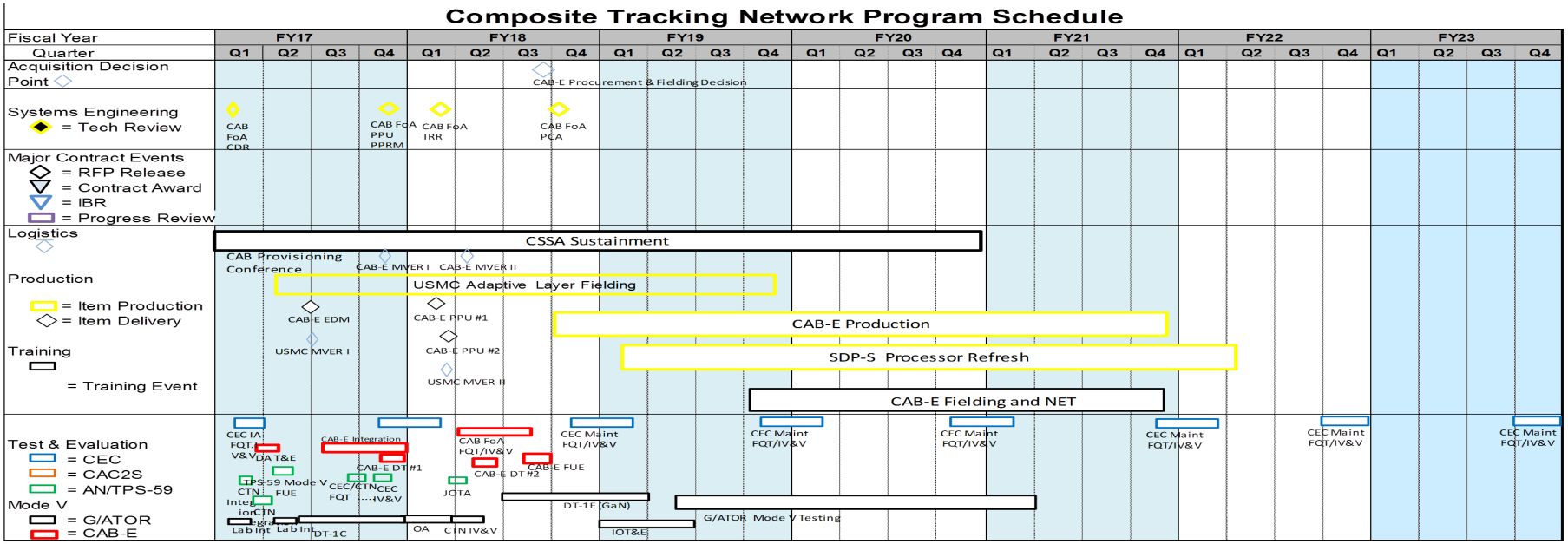

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2273				
TBMCS MR5V Government Developmental Test	1	2018	1	2018
TBMCS Option Year 4 Software Development Award	2	2018	2	2018
TBMCS FY18 System Design Review	4	2018	4	2018
TBMCS MR6V Fielding Decision	4	2018	4	2018
TBMCS MR6V Fielding Kits (PMC 4640)	4	2018	2	2019
TBMCS MR6V Government Developmental Test	1	2019	1	2019
TBMCS Option Year 5 Software Development Award	2	2019	2	2019
TBMCS MR7V Fielding Kits (PMC 4640)	4	2019	2	2020
TBMCS FY19 System Design Review	4	2019	4	2019
CTN - G/ATOR DT-1C and Operational Assessment	2	2017	1	2018
CTN - CAB-E Developmental Test #1	1	2018	1	2018
CTN - CAB-E Developmental Test #2	2	2018	2	2018
CTN - CAB-E Procurement and Fielding Decision (PMC 4640)	3	2018	3	2018
CTN - CAB-E Production	4	2018	4	2021
CTN - CAB-E Field User Evaluation (FUE)	3	2018	3	2018
CTN - G/ATOR DT-1E and IOT&E	3	2018	2	2019
CTN - CAB-E FoA Qualification/FQT/IV&V	2	2018	3	2018
CTN - G/ATOR Mode V Integration and Testing	2	2019	2	2021
CTN - CAB-E New Equipment Training and Fielding	4	2019	1	2023
RVVT Full Operational Capability (FOC)	4	2018	4	2018
C2AOS-C2IS Regression Testing of Tactical Map Interface	2	2018	2	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
C2AOS-C2IS Technical Readiness Review	1	2019	1	2019
C2AOS-C2IS USAF MOT&E Phase 1	2	2019	2	2019
C2AOS-C2IS Cyber Security Vulnerability Assessment	2	2019	3	2019
C2AOS-C2IS USAF MOT&E Phase 2	3	2019	3	2019
C2AOS-C2IS Compliance Testing	4	2019	4	2019
C2AOS-C2IS - USAF Full Deployment Decision (FDD)	4	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2274 / *Command & Control Warfare Sys*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
2274: *Command & Control Warfare Sys*	41.483	5.731	8.129	11.992	-	11.992	6.375	7.122	7.258	7.416	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

NOTE: The increase of $3.863M from FY2018 to FY2019 supports Multi- Function Electronic Warfare (MFEW) development and additional loadset development for advanced threats.

A. Mission Description and Budget Item Justification

COUNTER RADIO-CONTROLLED IMPROVISED EXPLOSIVE DEVICE (RCIED) ELECTRONIC WARFARE (USMC CREW) SYSTEMS are vehicle mounted and dismounted modular programmable multi-band radio frequency jammers designed to deny enemy use of selected portions of the radio frequency spectrum in the vicinity of the jammer to counter the RCIED threat. The mounted and dismounted systems provide Marines in vehicle convoys and on foot with the necessary protection from the continued and evolving threat of deadly RCIEDs. Legacy CREW systems are currently deployed to meet threats in the multiple theaters of operation and fielded to selected Marine Expeditionary Units (MEU)/Marine Expeditionary Forces (MEF) in support of worldwide deployment. To continue to support the various worldwide missions, each CREW unit receives customized programming (loadsets) to counter that area's RCIED threats. The testing, programming development, and product improvement research are funded with the CREW's RDTE,N funding and prioritized to meet the growing demand for all deployed Marine units.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: *USMC CREW - Product Development	1.132	1.416	7.608	0.000	7.608
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue the development of software waveform loadsets for USMC CREW Systems including mounted and dismounted system's waveforms used specifically to counter Improvised Explosive Device (IED) threat worldwide. -Continue software waveform loadsets for Universal Test Sets (UTS) across multiple deployment theaters. -Continue testing and technique development of additional software threatloads to overcome capability issues impacting dismounted Marines and each vehicle platform type. -Continue efforts to update the CREW CVRJ(V)2 (CREW Mounted Upgrade) to deliver a system capable of performing against the product specification.					
FY 2019 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Continue the development of software waveform loadsets for USMC CREW Systems including mounted and dismounted system's waveforms used specifically to counter Improvised Explosive Device (IED) threat worldwide. Increase loadset development of advanced threats. -Continue development of additional software improvements to overcome select CREW systems capability issues not limited by technology obsolescence. -Continue to develop vehicle installation kits for CREW mounted systems in order to support the integration and installation of the upgrade kits into Marine Corps vehicle platform. -Continue system level verification testing on the Modi II system to counter RCIED threats. -Initiate additional testing for CREW mounted system solution. -Initiate Market Research and Analysis, software development and hardware design and development for Multi-Function Electronic Warfare (MFEW) capability. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The increase of $6.192M from FY18 to FY19 supports Multi- Function Electronic Warfare (MFEW) development and additional loadset development for advanced threats.					
Title: *USMC CREW - Support	0.150	0.722	0.159	0.000	0.159
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue to conduct systems engineering support for the CREW family of systems and integration support required for the mounted CREW into Marine Expeditionary Units (MEU)/Marine Expeditionary Force (MEF) mission profiles by developing vehicle installation kits for these mounted units. -Continue system support for CVRJ (V)2, Thor III, Modi II, and Universal Test Sets by analyzing CREW performance impacts resulting from compatibility and environmental risk impacts. ***FY 2019 Base Plans:*** -Continue to conduct systems engineering support at a reduced level for the CREW family of systems and integration support required for the mounted CREW into Marine Expeditionary Units (MEU)/Marine Expeditionary Force (MEF) mission profiles by developing vehicle installation kits for these mounted units.					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Continue system support for CVRJ (V)2, Modi II, and Universal Test Sets by analyzing CREW performance impacts resulting from compatibility and environmental risk impacts. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: *USMC CREW - Test and Evaluation	2.659	3.095	2.243	0.000	2.243
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue test events in support of the CVRJ (V)2, Thor III, Modi II and Universal Test Set (UTS) systems regarding its ability to defeat the RCIED threat in multiple worldwide locations. -Continue testing of the mounted and dismounted CREW production units that will be fielded for Marine Expeditionary Units (MEU)/Marine Expeditionary Force (MEF) use. -Continue compatibility testing against USMC and other services devices to ensure Marine Corps CREW systems maintain required performance capabilities. -Complete characterizing operational limitations regarding the CREW systems and standoff restrictions for its operation. -Complete mounted and dismounted CREW improvements testing to distinguish possible design limitations that can be improved to optimize the Marines use of the system. ***FY 2019 Base Plans:*** -Continue test events in support of the CVRJ (V)2 and Universal Test Set (UTS) systems regarding its ability to defeat the RCIED threat in multiple worldwide locations. -Continue testing of the mounted and dismounted CREW production units that will be fielded for Marine Expeditionary Units (MEU)/Marine Expeditionary Force (MEF) use. -Continue compatibility testing against USMC and other services devices to ensure Marine Corps CREW systems maintain required performance capabilities. -Continue mounted and dismounted CREW improvements testing to distinguish possible design limitations that can be improved to optimize the Marines use of the system. -Initiate test events for loadsets against advanced and emerging threat systems. ***FY 2019 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: *USMC CREW - Management Services	1.790	2.896	1.982	0.000	1.982
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue to manage the new RCIED techniques development group and hardware engineering team to enhance loadsets upgrades to counter the evolving threat and prevent technology obsolescence for CVRJ(V)2, Thor III, Modi II and the Universal Test Set systems. Conducting system level configuration management activities for all CREW systems. ***FY 2019 Base Plans:*** -Continue to manage the new RCIED techniques development group and hardware engineering team at a reduced level to enhance loadset upgrades to counter the evolving threat and prevent technology obsolescence for CVRJ(V)2, Modi II and the Universal Test Set systems. Conducting system level configuration management activities for all CREW systems. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	5.731	8.129	11.992	0.000	11.992

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/652000: *CREW*	75.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

COUNTER RADIO-CONTROLLED IMPROVISED EXPLOSIVE DEVICE (RCIED) ELECTRONIC WARFARE (USMC CREW): CREW mounted and dismounted systems provide Marines in vehicle convoys and on foot with the necessary protection from the continued and evolving threat of deadly RCIEDs in all current and future

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

operations. The program will continue to develop new counter techniques, improve capabilities, enhance software and develop upgrades to counter evolving threats and prevent technology obsolescence. Activities include waveform development, non-recurring engineering for system enhancements, capability upgrades, and the testing/government studies required to support these changes. 3100 CREW Vehicle Receiver Jammer (CVRJ)(V1) mounted systems were upgraded with an increased capability, CVRJ(V)2, and fielded to support vehicle convoys. The United States Marine Corps (USMC) intends to upgrade the CVRJ(V)2 (CREW Mounted Upgrade) to counter advance threats facing deployed units. The Thor III dismounted systems fielded to Operation Enduring Freedom (OEF) and to select Marine Expeditionary Units (MEUs), will be replaced by the Modi II systems starting in FY18. The Modi II program consists of 565 dismounted systems and was initiated as an ongoing effort to develop new techniques, improve capabilities, enhance software and develop waveform loadsets to counter evolving threats and prevent technology obsolescence for the Thor III dismounted systems. FY18 plan reflects test and evaluation for CREW development efforts to include software load-set development and capability testing of the Modi II CREW System. FY19 plan reflects test and evaluation for CREW development efforts to include software load-set development and capability testing of the CREW System and market research and development efforts for the Multi-Function Electronic Warfare, which would do both CREW and Counter Unmanned Aerial Systems (C-UAS).

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	WR	NSWC CD 1 : CRANE, IN	0.000	0.000		0.000		1.670	Nov 2018	-		1.670	0.000	1.670	-
USMC CREW	WR	NSWC CD 2 : CRANE, IN	4.992	1.132	Jun 2017	1.416	Feb 2018	4.789	Feb 2019	-		4.789	Continuing	Continuing	Continuing
USMC CREW	C/CPIF	NSWC CD : CRANE, IN	0.000	0.000		0.000		1.149	Feb 2019	-		1.149	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	7.549	0.000		0.000		0.000		-		0.000	0.000	7.549	-
		Subtotal	12.541	1.132		1.416		7.608		-		7.608	Continuing	Continuing	N/A

Remarks

USMC CREW NSWC CRANE (Crane, IN) FY17 - FY19: Design, develop and contract engineering changes to the CREW systems and to develop software Threat Load (TL) loadsets for all CREW systems to continue to counter the evolving RCIED Threats.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	WR	SSC-A : CHARLESTON, SC	1.106	0.150	Jun 2017	0.155	Feb 2018	0.159	Feb 2019	-		0.159	Continuing	Continuing	Continuing
USMC CREW	WR	NSWC DD : DAHLGREN, VA	1.361	0.000		0.567	Feb 2018	0.000		-		0.000	0.000	1.928	-
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	3.800	0.000		0.000		0.000		-		0.000	0.000	3.800	-
		Subtotal	6.267	0.150		0.722		0.159		-		0.159	Continuing	Continuing	N/A

Remarks

USMC CREW SSC-Atlantic FY17 - FY19: System Engineering and validation and verification.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	MIPR	YPG : YUMA, AZ	8.802	0.000		2.914	Apr 2018	1.236	Apr 2019	-		1.236	Continuing	Continuing	Continuing
USMC CREW	MIPR	SOCOM : TAMPA, FL	0.000	0.000		0.000		0.200	Jun 2019	-		0.200	Continuing	Continuing	Continuing
USMC CREW	WR	NSWC DD : DAHLGREN, VA	0.195	0.000		0.120	Apr 2018	0.000	Apr 2019	-		0.000	Continuing	Continuing	Continuing
USMC CREW	WR	NSWC CD : CRANE, IN	0.057	2.278	Jul 2017	0.061	Feb 2018	0.807	Feb 2019	-		0.807	Continuing	Continuing	Continuing
USMC CREW	MIPR	DLA : PHILADELPHIA, PA	0.327	0.381	Aug 2017	0.000		0.000	Aug 2019	-		0.000	Continuing	Continuing	Continuing
USMC CREW	C/FFP	NSWC DD : DAHLGREN, VA2	0.000	0.000		0.000		0.000	Apr 2019	-		0.000	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	3.444	0.000		0.000		0.000		-		0.000	0.000	3.444	-
		Subtotal	12.825	2.659		3.095		2.243		-		2.243	Continuing	Continuing	N/A

Remarks

USMC CREW YPG (Yuma Proving Grounds, AZ) FY17 - FY19: Provide test ranges and results analysis for all CREW systems.
USMC CREW NSWC DD FY17 and FY19: Provide test support and reports.
USMC CREW NSWC CD FY17 - FY19: Provide test assets and testing.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	WR	NSWC CD : CRANE, IN	6.497	1.489	Jan 2017	2.629	Jan 2018	1.580	Jan 2019	-		1.580	Continuing	Continuing	Continuing
USMC CREW	C/CPFF	NSWC DD : DAHLGREN, VA	1.751	0.301	Jul 2017	0.267	Jan 2018	0.402	Jan 2019	-		0.402	Continuing	Continuing	Continuing
Prior Years Cumulative Funds	Various	VARIOUS : VARIOUS	1.602	0.000		0.000		0.000		-		0.000	0.000	1.602	-
		Subtotal	9.850	1.790		2.896		1.982		-		1.982	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

USMC CREW NSWC CRANE FY17 - FY19: Engineering and Acquisition support.
USMC CREW NSWC DD FY17 - FY19: Configuration Management (CM), Liaison Officer (LNO) and engineering support.

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	41.483	5.731		8.129		11.992		-		11.992	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

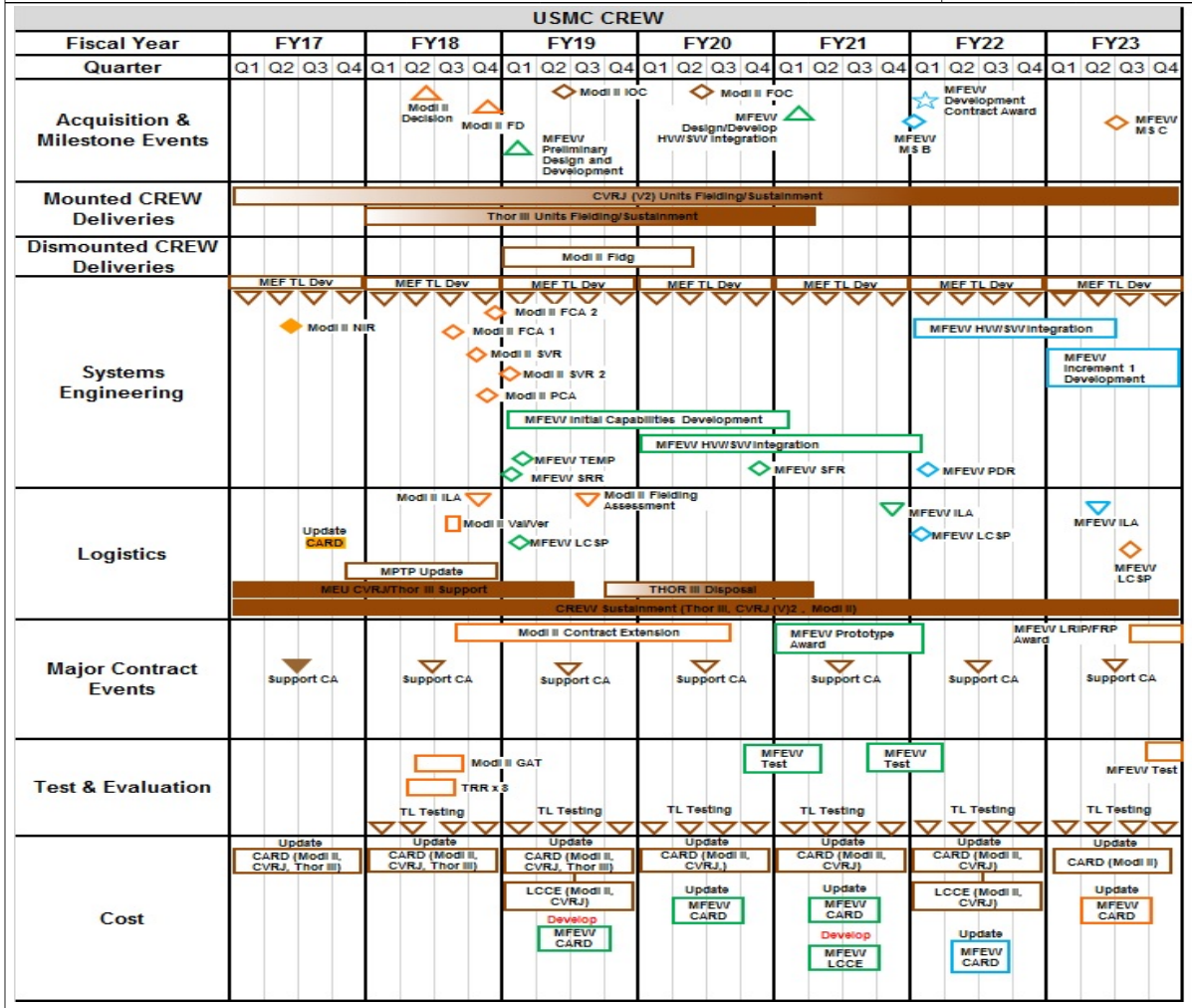

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2274				
USMC CREW Threat Load (TL) Development	1	2017	4	2023
Modi II Fielding Decision	4	2018	4	2018
Modi II Initial Operational Capability (IOC)	2	2019	2	2019
Multi- Function Electronic Warfare (MFEW) Development	1	2019	1	2022

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy											Date: February 2018	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*				Project (Number/Name) 2275 / *Marine Corps Tactical Radio Systems*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
2275: *Marine Corps Tactical Radio Systems*	41.358	14.465	22.722	23.749	-	23.749	14.254	13.387	13.762	14.044	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

The overall project increase of $1.027M from FY18 to FY19 supports development and testing efforts for a VSAT Medium Variant (VSAT-M) replacement system due to subcomponent obsolescence and end-of-life/end-of-sale (EOL/EOS).

Beginning in FY19, COC funding has been realigned from project 2273, Air Operations C2 Systems to this project. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.

A. Mission Description and Budget Item Justification

Tactical Communications Modernization (TCM): TCM supports the research, testing, and evaluation of non-developmental tactical voice and data radio systems for mounted and dismounted operations within all echelons of the Marine Air Ground Task Force. The testing will ensure the communication systems are joint networking capable and supports National Security Agency (NSA) Communications Security (COMSEC) Modernization requirements. The funding provides contracted engineering support, facility test support, and test reporting for Mobile User Objective System (MUOS, High Frequency Radio II (HFR II), Multi-Channel Man Pack (MCMP), and Multi-Channel Handheld (MCHH) radios, terminals, antennas, and Joint Enterprise Network Manager (JENM).

Networking on the Move (NOTM): NOTM provides a robust command and control (C2) capability by integrating tactical data systems with on the move satellite communications (SATCOM) for beyond line-of-sight ability that allows battlefield commanders to have uninterrupted two-way access to digital data, anywhere on the battlefield. NOTM provides Marine Air-Ground Task Force (MAGTF) commanders and staffs with full Common Operational Picture (COP) access, virtually unlimited situational awareness and a powerful ability to issue digital orders (fires, maneuver, planning) to GCE, ACE and LCE units at all echelons while on-the-move or at-the-halt. NOTM also provides Marine units the capability to link with and extend Defense Information System Network (DISN) services; SIPRNet, NIPRNet, and Defense Switched Networks (DSN). Integrated full motion video (receipt and retransmission), tactical voice communications plus three options for secure wireless local area network (LAN) connectivity between staff members makes this amphibious capability a crucial asset to all elements of the MAGTF.

Very Small Aperture Terminal (VSAT): VSAT is an integrated Commercial Off-the-Shelf (COTS) satellite communications terminal with a modular architecture that supports drop and insert architecture through scalable and flexible applications. VSAT uses commercial Ku and military Ka and X frequency bands to provide beyond line-of-sight (BLOS) connectivity to support intra-MAGTF communications (NIPRNET, SIPRNET, and telephony) down to the battalion/squadron level. With the addition of the VSAT-Expeditionary (VSAT-E) the VSAT Family of Systems (FoS) now comes in four modular variants, depending on MAGTF-size and mission.

Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): SMART-T is an Army led, ACAT II program. The Marine Corps SMART-T has fielded the full Authorized Acquisition Objective (AAO) of 42 terminals and 35 AN/PSQ-17 Network Planning tools and completed the Advanced Extremely High Frequency (AEHF) upgrades. Out

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of warranty repair for legacy components will be executed, when necessary, using the Army National Maintenance Contract. The SMART-T program will procure and field its Terminal Operating Unit (TOU) upgrades in FY18.

Terrestrial Wideband Transmission Systems (TWTS): TWTS is a capabilities portfolio that includes Beyond Line of Sight (BLOS) system (AN/TRC-170A) and Line of Sight (LOS) systems AN/MRC-142 Family of Systems (FoS). The AN/TRC-170A is a transportable BLOS, terrestrial, self-enclosed troposcatter terminal (multichannel) capable of transmitting and receiving digital data over varying distances up to 100 miles. Next Generation Troposcatter (NGT) is a transit case solution which will replace the AN/TRC-170A. AN/MRC-142B provides ship to shore communication. AN/MRC-142C FoS provides LOS, two-way, secure voice and data communications up to 35 miles.

Combat Operations Center (COC) - AN/TSQ-239 (V)1-4 are a deployable, self-contained, modular, centralized and scalable facility ((V)1 MEF-size, (V)2 MSC/Div-size, (V)3 Regiment-size, (V)4 Battalion-size) which provides digital, shared Command and Control/Situational Awareness functionalities to enhance the Common Operational Picture (COP) for the Command Element, Ground Command Element, Air Combat Element, and Logistics Combat Element. It is a commercial-off-the-shelf integrated hardware solution using unit provided radios, re-hosted tactical data systems, and available Marine Corps prime movers to transport the system. Funds support testing and Information Assurance (IA) certification activities, integration of emerging technology, and On The Move (OTM) capabilities. COC transitions from Project C2273 to Project C2275 in FY19.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: TCM: Product Development	0.423	1.542	1.253	0.000	1.253
Articles:	-	-	-	-	-
FY 2018 Plans: - Initiate the Life Cycle Cost Estimate (LCCE) to support Multi Channel Man Pack (MCMP)Radio (formerly Multi-Band Radio Replacement (MBR R)).					
FY 2019 Base Plans: - Continue funding the Marine Corps fair share cost for development of the Joint Enterprise Network Manager (JENM) application required for MUOS.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: Decrease of $.289M from FY18 to FY19 is due to a decrease in the Marine Corps fair share cost for development of the JENM application required for MUOS combined with completion of the LCCE in FY18.					
Title: TCM: Engineering and Program Support	0.059	0.030	0.335	0.000	0.335
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: - Continue engineering and support efforts. ***FY 2019 Base Plans:*** - Continue engineering and support efforts. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: TCM: Test and Evaluation Support	0.352	3.505	3.360	0.000	3.360
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue to support Mobile Objective User System (MUOS) test events and evaluations. - Initiate procurement of test assets for equipment such as HFR II and other TCM Family of Systems (FoS). - Initiate test events such as software development test, road shock, shake and vibration testing and MIL-STD testing. ***FY 2019 Base Plans:*** - Continue procurement of test assets and initiate test events for TCM Family of Systems (FoS),such as Multi Channel Hand Held (MCHH) (formerly THHR Replacement on schedule). - Continue test events such as software development test, road shock, shake and vibration testing and MIL-STD testing for TCM FoS, such as HFR II and Multi Channel Man Pack (MCMP) (formerly MBR Replacement). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: TCM: Management Services	0.059	0.295	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue Engineering and Program Support for the TCM Family of Systems (FoS).					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Continue support of FFRDC research and engineering for the replacement of HFRII and MBR II equipment. ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: NOTM: Product Development ***Articles:*** ***FY 2018 Plans:*** - Continue Engineering Change Proposals (ECPs), technology refreshes to extend the systems life and maintain interoperability and major product improvements to complete the AAO of 140 systems. ***FY 2019 Base Plans:*** - Continue Engineering Change Proposals (ECPs), technology refreshes to extend the systems life and maintain interoperability and major product improvements to complete the AAO of 140 systems. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.	5.269 -	6.220 -	6.150 -	0.000 -	6.150 -
Title: NOTM: Test and Evaluation Support ***Articles:*** ***FY 2018 Plans:*** - Continue test and evaluation support and testing for NOTM-A, BMDL, NOTM Size, Weight and Power (SWaP) reduction ECPs, and NOTM ITV efforts. ***FY 2019 Base Plans:*** - Continue test and evaluation support and testing for NOTM ITV and NOTM GCV systems. ***FY 2019 OCO Plans:***	5.674 -	5.161 -	0.687 -	0.000 -	0.687 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $4.474M from FY18 to FY19 results from completion of NOTM-A, BMDL, and NOTM Size, Weight and Power (SWaP) reduction ECPs.					
Title: NOTM: Management Services	0.000	0.000	0.200	0.000	0.200
Articles:	-	-	-	-	-
FY 2018 Plans: N/A ***FY 2019 Base Plans:*** - Initiates research efforts of servers and capability of cyber foraging, network foraging, and cloud storage. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $.200M supports initiation of research efforts of servers and capability of cyber foraging, network foraging, and cloud storage.					
Title: VSAT: Product Development	0.482	0.366	0.455	0.000	0.455
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue VSAT GUI Design and Development due to quarterly security software updates. ***FY 2019 Base Plans:*** - Continue VSAT GUI Design and Development. - Initiate development efforts for the VSAT-M Replacement system. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: VSAT: Test and Evaluation	0.094	0.211	2.683	0.000	2.683
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: - Initiate test and evaluation for system refreshes such as Master Reference Terminal (MRT) technical refresh and laptop refresh. ***FY 2019 Base Plans:*** - Procurement of VSAT-M Replacement system test asset. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $2.472M from FY2018 to FY2019 supports procurement of VSAT-M Replacement system test assets and test events.					
Title: VSAT: Engineering and Program Support	0.252	0.254	0.201	0.000	0.201
Articles:	-	-	-	-	-
FY 2018 Plans: - Initiate ECPs on modem upgrades and R&D efforts focusing on Next Generation SATCOM. ***FY 2019 Base Plans:*** - Continue ECPs on modem upgrades and R&D efforts focusing on Next Generation SATCOM. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: VSAT: Management Services	0.060	0.077	0.077	0.000	0.077
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue engineering efforts in support of analysis of requirements development. ***FY 2019 Base Plans:*** - Continue engineering efforts through a FFRDC in support of analysis of requirements development. ***FY 2019 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: SMART-T: Engineering and Program Support	0.047	0.087	0.087	0.000	0.087
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue to fund ECPs and Information Assurance support efforts. ***FY 2019 Base Plans:*** - Continue to fund ECPs and Information Assurance support efforts. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: SMART-T: Management Services	0.067	0.100	0.103	0.000	0.103
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue to provide engineering analysis on potential future technical upgrades. ***FY 2019 Base Plans:*** - Continue to provide engineering analysis through a FFRDC on potential future technical upgrades. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: TWTS: Product Development	0.000	1.764	0.050	0.000	0.050
Articles:	-	-	-	-	-
FY 2018 Plans:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Initiate TWTS Manpower Training Analysis Plan (MPTA/P) and NGT Architecture Development. ***FY 2019 Base Plans:*** - Continue TWTS Manpower Training Analysis Plan (MPTA/P). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $1.714M from FY18 to FY19 reflects 85% completion of the TWTS Manpower Training Analysis Plan (MPTA/P) and completion of NGT Architecture Development.					
Title: TWTS: Engineering and Program Support	1.034	1.796	1.254	0.000	1.254
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue to fund engineering, safety, logistics and program management support for the Next Generation Tropo (NGT) systems and TWTS Family of Systems (FoS). ***FY 2019 Base Plans:*** - Continue to fund program management support for the Next Generation Tropo (NGT) systems and TWTS Family of Systems (FoS). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $.542M from FY18 to FY19 is due to the finalization of initial engineering, safety, logistics and program management support for the Next Generation Tropo (NGT) systems and TWTS Family of Systems (FoS).					
Title: TWTS: Test and Evalution Support	0.222	0.931	1.286	0.000	1.286
Articles:	-	-	-	-	-
FY 2018 Plans: - Complete test and evaluation plans.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Initiate test and evaluation events such as MIL-STD testing, NGT JITC certification plan and C/X-band testing in support of Next Generation Tropo (NGT). ***FY 2019 Base Plans:*** - Continue test and evaluation events such as MIL-STD testing, NGT JITC certification plan and C/X-band testing in support of Next Generation Tropo (NGT). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $.355M from FY18 to FY19 supports continuing test and evaluation efforts; such as MIL-STD testing, NGT JITC certification plan and C/X-band testing in support of Next Generation Tropo (NGT).					
Title: TWTS: Management Services	0.371	0.383	0.458	0.000	0.458
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue engineering and program support for TWTS FoS. ***FY 2019 Base Plans:*** - Continue engineering and program support for TWTS FoS. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $.075M from FY18 to FY19 supports additional engineering efforts for NGT X Band waveband analysis.					
Title: COC: Product Development	0.000	0.000	2.572	0.000	2.572
Articles:	-	-	-	-	-
FY 2018 Plans: - Refer to Project 2273 ***FY 2019 Base Plans:*** - Continue testing and software integration efforts needed to align with other C2 systems. ***FY 2019 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $2.572M is a result of COC transition from Project 2273 to Project 2275 beginning in FY19.					
Title: COC: Management Services	0.000	0.000	2.538	0.000	2.538
Articles:	-	-	-	-	-
FY 2018 Plans: - Refer to Project 2273 ***FY 2019 Base Plans:*** - Continue engineering support for system optimization and system enhancements. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $2.538M from FY18 to FY19 is a result of transition from C2273 to C2275 and increased effort to support system optimization and system enhancements such as laptop display refresh and client refresh.					
Accomplishments/Planned Programs Subtotals	14.465	22.722	23.749	0.000	23.749

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/4633-1: *TCM*	38.503	17.852	204.285	-	204.285	166.164	288.704	279.992	291.116	Continuing	Continuing
• PMC/4631-2: *NOTM*	51.754	111.340	92.669	-	92.669	79.374	53.837	14.796	14.933	Continuing	Continuing
• PMC/4633-3: *VSAT*	6.589	6.658	7.567	-	7.567	4.761	3.205	3.269	3.334	Continuing	Continuing
• PMC/4633-4: *SMART-T*	0.537	0.549	0.571	-	0.571	0.593	0.605	0.617	0.629	Continuing	Continuing
• PMC/4633-5: *TWTS*	1.894	12.237	64.911	-	64.911	37.471	56.234	215.216	211.417	Continuing	Continuing
• PMC/7000-1: *SMART-T Spares*	0.201	0.205	0.207	-	0.207	0.212	0.216	0.220	0.225	Continuing	Continuing
• PMC/4631-1: *COC*	2.103	10.188	5.768	-	5.768	8.083	11.733	11.979	12.226	Continuing	Continuing
• RDT&E/C2273: *COC*	3.525	5.363	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.888

Remarks

RDTE for COC transitions from C2273 to C2275 in FY19.

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D. Acquisition Strategy

Tactical Communications Modernization (TCM): TCM will maximize the use of non-developmental radio solutions to meet the next generation of Marine Corps tactical radio requirements. The Mobile User Objective System (MUOS) effort will utilize terminal licenses and receive antennas via a bailment agreement for testing at contracted government test labs to include environmental, shock, electromagnetic compatibility and interoperability testing. High Frequency Radios II (HFR II) contracting strategy will maximize the use of non-developmental high frequency radios while promoting competition by having industry provide proposed HFR II solutions, validated by Military Standard tests with best value selection upon successful completion of tests.

Networking on the Move (NOTM): NOTM will use an evolutionary acquisition strategy that leverages Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) technology to procure, sustain and meet emerging requirements. The design of the system provides for internal growth capability through an open system architecture enabling technology refresh to extend the system's life, maintain interoperability, Information Assurance (IA) compliance, and reduce costs due to Diminishing Manufacturing Sources and Material Shortages (DMSMS). It is envisioned that technology refresh will occur on the NOTM hardware and software periodically due to component obsolescence, user-driven requests for improvements, IA compliance, and mission-related requirements. Refresh will include investments to incorporate evolving capability to ensure compatibility with other systems, create lighter more efficient equipment, and keep pace with evolving software requirements. End-of-life equipment refresh is expected throughout the program's life cycle and may be managed through kit purchases, replacement through Engineering Change Proposals (ECPs), or as replacement parts as equipment is repaired.

Very Small Aperture Terminal (VSAT): The acquisition of the external antenna is a single step acquisition which is adding capability to the VSAT-L terminal. The external antenna provides a dual shot capability that replaces the LMST and Phoenix systems. The VSAT Program approach for technology refreshes and sub-component upgrades is evolutionary. This strategy is based on procuring the latest mature and supported Commercial-Off-the Shelf (COTS) technology to keep the systems technology relevant to continue to meet mission requirements. The VSAT Program will submit Engineering Change Proposals (ECPs) for technology refresh modifications due to subcomponent obsolescence. The ECP will support the latest iteration of the Original Equipment Manufacturer (OEM) COTS equipment. This is a life cycle sustainment effort that maintains common logistical elements without re-engineering for form, fit, and function whenever warranted, with continued support of formal school training curriculum for relevant VSAT FoS hardware and software functions.

Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): SMART-T is an Army led, ACAT II program. The Marine Corps SMART-T has fielded the full Authorized Acquisition Objective (AAO) of 42 terminals and 35 AN/PSQ-17 Network Planning tools and completed the Advanced Extremely High Frequency (AEHF) upgrades. Out of warranty repair for legacy components will be executed, when necessary, using the Army National Maintenance Contract. The SMART-T program will procure and field its Terminal Operating Unit (TOU) upgrades in FY18.

Terrestrial Wideband Transmission Systems (TWTS): AN/TRC-170A, the current Marine Corps troposcatter capability, was initially fielded in 1992. Next Generation Troposcatter (NGT) will replace AN/TRC-170A due to the system's obsolescence and an approved NGT Joint Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy (DOTMLPF-P) Change Recommendation (DCR). The Marine Corps plans to leverage the US Army requirement and partner with their Program office.

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Combat Operations Center (COC): The COC AN/TSQ-239 (V)1-4 is the foundation of USMC Command and Control (C2), meeting near term communications and network requirements across the OpFor. There is a continuing developmental effort to evolve the COC into a fully integrated MAGTF C2 capability. FY19 continues to maintain industry standard and interoperability with disparate C2 systems across the joint forces.

E. Performance Metrics

N/A

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TCM JENM Development	SS/CPFF	ARL : Aberdeen, MD	1.650	0.388	Feb 2017	1.407	Feb 2018	1.118	Feb 2019	-		1.118	0.000	4.563	-
TCM FoS LCCEs	C/IDIQ	MCSC : Quantico, VA	0.000	0.035	Apr 2017	0.135	Dec 2017	0.135	Dec 2018	-		0.135	0.000	0.305	-
NOTM Development/ Enhancement	WR	SSC-LANT2 : Charleston, SC	0.000	0.000		0.000		1.200	Apr 2019	-		1.200	0.000	1.200	-
NOTM Development/ Enhancement	MIPR	ARL2 : Aberdeen, MD	0.000	0.000		0.000		0.800	Mar 2019	-		0.800	0.000	0.800	-
NOTM Development/ Enhancement	C/FFP	MCTSSA : Camp Pendleton, CA	0.000	0.000		0.000		0.200	Jan 2019	-		0.200	0.000	0.200	-
NOTM Development	C/CPFF	SSC-LANT : Charleston, SC	2.239	0.115	May 2017	1.383	May 2018	0.200	May 2019	-		0.200	Continuing	Continuing	Continuing
NOTM Development	WR	SSC-Pacific : San Diego, CA	0.521	1.038	Feb 2017	0.712	Feb 2018	2.800	Feb 2019	-		2.800	Continuing	Continuing	Continuing
NOTM-A	WR	SSC-Atlantic : Charleston, SC	0.000	1.497	Feb 2017	0.000		0.250	Apr 2019	-		0.250	0.000	1.747	-
NOTM-A	C/CPFF	DTIC : Fort Belvoir, VA	0.000	2.619	Jul 2017	1.125	Feb 2018	0.000		-		0.000	0.000	3.744	-
NOTM-ITV	WR	SSC-A : Charleston, SC	0.000	0.000		0.750	Feb 2018	0.000		-		0.000	0.000	0.750	-
NOTM BMDL SATCOM	WR	ARL : Aberdeen, MD	0.000	0.000		2.250	Mar 2018	0.000		-		0.000	0.000	2.250	-
NOTM Production Enchancement	MIPR	DTIC : Fort Belvoir, VA	0.000	0.000		0.000		0.700	Mar 2019	-		0.700	Continuing	Continuing	Continuing
VSAT GUI Development	C/FFP	CECOM : Aberdeen, MD	0.136	0.482	Jun 2017	0.366	Apr 2018	0.455	Jun 2019	-		0.455	0.000	1.439	-
TWTS NGT Architecture Development	C/FFP	MCSC : Quantico, VA	0.000	0.000		0.200	Nov 2017	0.000		-		0.000	0.000	0.200	-
TWTS NGT MPTA/P Initiation	C/CPFF	TRASYS : GA Tech	0.000	0.000		1.564	Dec 2017	0.050	Dec 2018	-		0.050	Continuing	Continuing	Continuing
COC	WR	SSC-Lant : Chareleston, SC	0.000	0.000		0.000		1.500	May 2019	-		1.500	0.000	1.500	-
COC	WR	NSWC : Dahlgren, VA	0.000	0.000		0.000		0.600	May 2019	-		0.600	0.000	0.600	-

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
COC	C/CPIF	NSWC2 : Dahlgren, VA	0.000	0.000		0.000		0.200	May 2019	-		0.200	0.000	0.200	-
COC	C/CPIF	SSC-Lant2 : Charleson, SC	0.000	0.000		0.000		0.272	May 2019	-		0.272	0.000	0.272	-
Prior Years Cumulative Funding	Various	Various : Various	12.438	0.000		0.000		0.000		-		0.000	0.000	12.438	-
		Subtotal	16.984	6.174		9.892		10.480		-		10.480	Continuing	Continuing	N/A

Remarks

COC realigned from Project C2273 to C2275 starting in FY19.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TCM Engineering Support	Various	MCSC : Quantico, VA	0.000	0.059	Sep 2017	0.030	Sep 2018	0.335	Sep 2019	-		0.335	Continuing	Continuing	Continuing
VSAT Engineering Support	WR	SSC-PAC : San Diego, CA	0.239	0.252	Feb 2017	0.254	Feb 2018	0.201	Feb 2019	-		0.201	Continuing	Continuing	Continuing
SMART-T Engineering Support	WR	SSC-LANT : Charleston, SC	0.257	0.047	Dec 2016	0.087	Mar 2018	0.087	Mar 2019	-		0.087	Continuing	Continuing	Continuing
TWTS NGT Safety Support	C/CPFF	NSWC : Indian Head, MD	0.000	0.193	May 2017	0.227	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
TWTS Program Management Support	Various	MCSC : Quantico, VA	0.000	0.841	Aug 2017	1.339	May 2018	0.559	May 2019	-		0.559	Continuing	Continuing	Continuing
TWTS NGT Logistics Support	WR	TBD : TBD	0.000	0.000		0.230	May 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	1.323	0.000		0.000		0.000		-		0.000	0.000	1.323	-
TWTS NGT Engineering Support	WR	SSC-LANT : Charleston, SC	0.000	0.000		0.000		0.695	Nov 2018	-		0.695	0.000	0.695	-
		Subtotal	1.819	1.392		2.167		1.877		-		1.877	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TCM FoS Test Activities	TBD	TBD : TBD	0.000	0.000		1.050	Feb 2018	2.020	Aug 2019	-		2.020	Continuing	Continuing	Continuing
TCM MUOS FUE	WR	SPAWAR Lant : TBD	0.000	0.177	Aug 2017	0.000		0.000		-		0.000	0.000	0.177	-
TCM T&E Support	MIPR	DHHS : Bethesda, MD	0.000	0.121	Oct 2017	0.000		0.290	Mar 2019	-		0.290	0.000	0.411	-
TCM RADHAZ PF	WR	NWSC : Dahlgren	0.000	0.054	Feb 2017	0.000		0.000		-		0.000	0.000	0.054	-
TCM FoS Test Assets	C/FFP	MCSC : Quantico, VA	0.000	0.000		2.455	Jun 2018	1.050	Jul 2019	-		1.050	0.000	3.505	-
NOTM Vehicle Integration Testing	WR	SSC-LANT : Charleston, SC	1.013	0.533	Jun 2017	1.975	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
NOTM-A Testing	C/CPFF	DTIC : Fort Belvoir, VA	0.000	3.317	Jun 2017	1.686	Feb 2018	0.000		-		0.000	0.000	5.003	-
NOTM-A Testing	WR	NSWC Crane : Crane, IN	0.000	0.000		0.750	Feb 2018	0.200	Apr 2019	-		0.200	0.000	0.950	-
NOTM-A Testing	WR	SSC PAC : San Diego, CA	0.000	0.000		0.750	Feb 2018	0.000		-		0.000	0.000	0.750	-
NOTM EOL	C/CPFF	SSC_LANT : Charleston, SC	0.236	0.000		0.000		0.200	Apr 2019	-		0.200	0.000	0.436	-
NOTM SWAP Reduction ECP	C/CPFF	SSC-LANT : Charleston, SC	0.000	1.824	May 2017	0.000		0.000		-		0.000	0.000	1.824	-
NOTM ITV Testing	C/CPFF	TBD : TBD	0.000	0.000		0.000		0.287	May 2019	-		0.287	0.000	0.287	-
VSAT Testing	MIPR	TBD : TBD	0.000	0.094	Jul 2017	0.211	Feb 2018	2.683	Jan 2019	-		2.683	Continuing	Continuing	Continuing
TWTS T&E Support	C/FFP	Dept. of Human Health and Services : Rockville, MD	0.000	0.222	Dec 2016	0.366	Feb 2018	0.220	Feb 2019	-		0.220	Continuing	Continuing	Continuing
TWTS NGT MILSTD c/x-band Testing	TBD	SPAWAR : TBD	0.000	0.000		0.365	Dec 2017	0.839	Feb 2019	-		0.839	Continuing	Continuing	Continuing
TWTS NGT JTIC Certification Plan	TBD	TBD : TBD	0.000	0.000		0.200	Nov 2017	0.227	Feb 2019	-		0.227	0.000	0.427	-
Prior Years Cumulative Funding	Various	Various : Various	10.025	0.000		0.000		0.000		-		0.000	0.000	10.025	-
		Subtotal	11.274	6.342		9.808		8.016		-		8.016	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TCM Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	0.474	0.059	Feb 2017	0.295	Feb 2018	0.000		-		0.000	0.000	0.828	-
NOTM Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	0.000	0.000		0.000		0.200	Dec 2018	-		0.200	0.000	0.200	-
VSAT Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	5.009	0.060	Feb 2017	0.077	Feb 2018	0.077	Feb 2019	-		0.077	0.000	5.223	-
SMART-T Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	0.100	0.067	Feb 2017	0.100	Feb 2018	0.103	Feb 2019	-		0.103	Continuing	Continuing	Continuing
TWTS Engineering Support	FFRDC	US Army, MITRE : Stafford, Va	0.000	0.371	Feb 2017	0.383	Feb 2018	0.458	Feb 2019	-		0.458	0.000	1.212	-
COC Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	0.000	0.000		0.000		2.538	Feb 2019	-		2.538	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	FFRDC	US Army, MITRE : Stafford, VA	5.698	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	11.281	0.557		0.855		3.376		-		3.376	Continuing	Continuing	N/A

Remarks

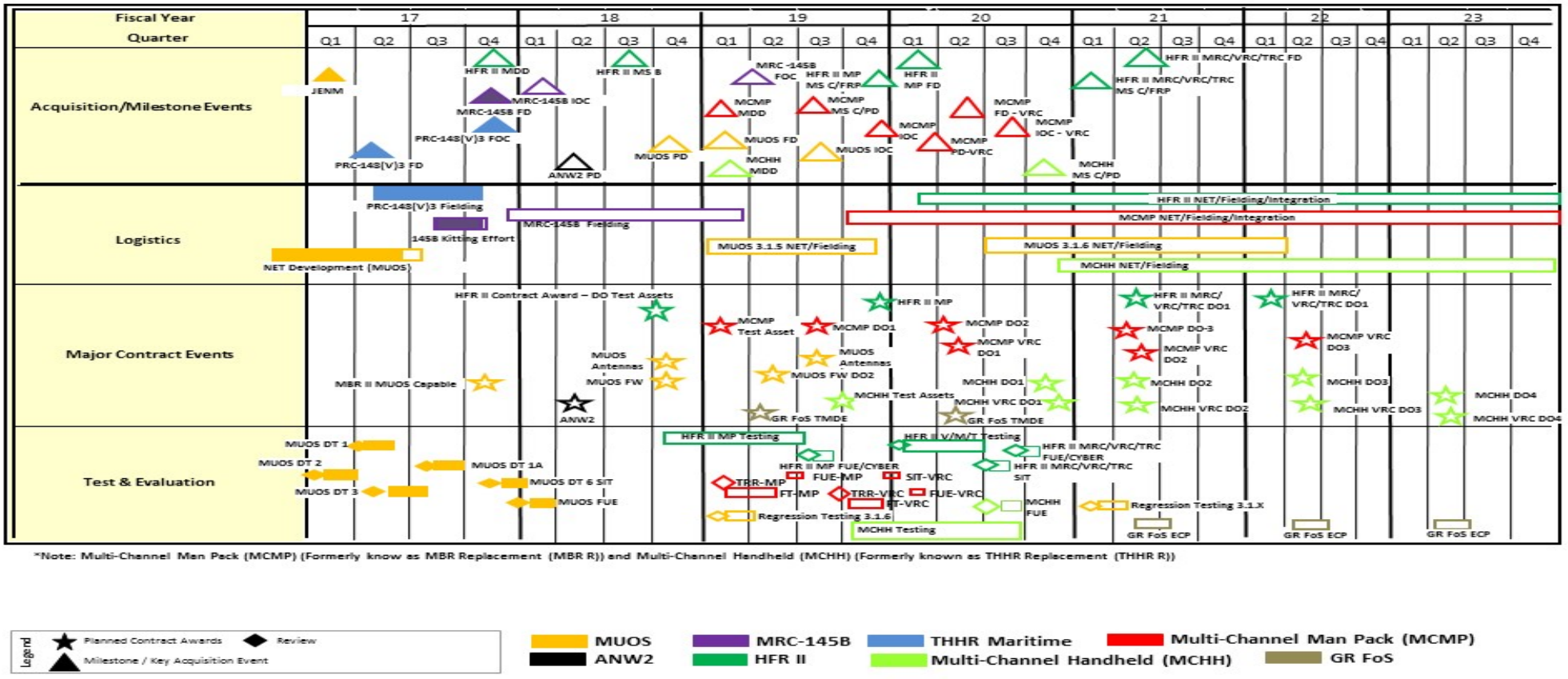
COC realigned from Project C2273 to C2275 starting in FY19.

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	41.358	14.465		22.722		23.749		-		23.749	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

TCM Schedule



*Note: Multi-Channel Man Pack (MCMP) (Formerly know as MBR Replacement (MBR R)) and Multi-Channel Handheld (MCHH) (Formerly known as THHR Replacement (THHR R))

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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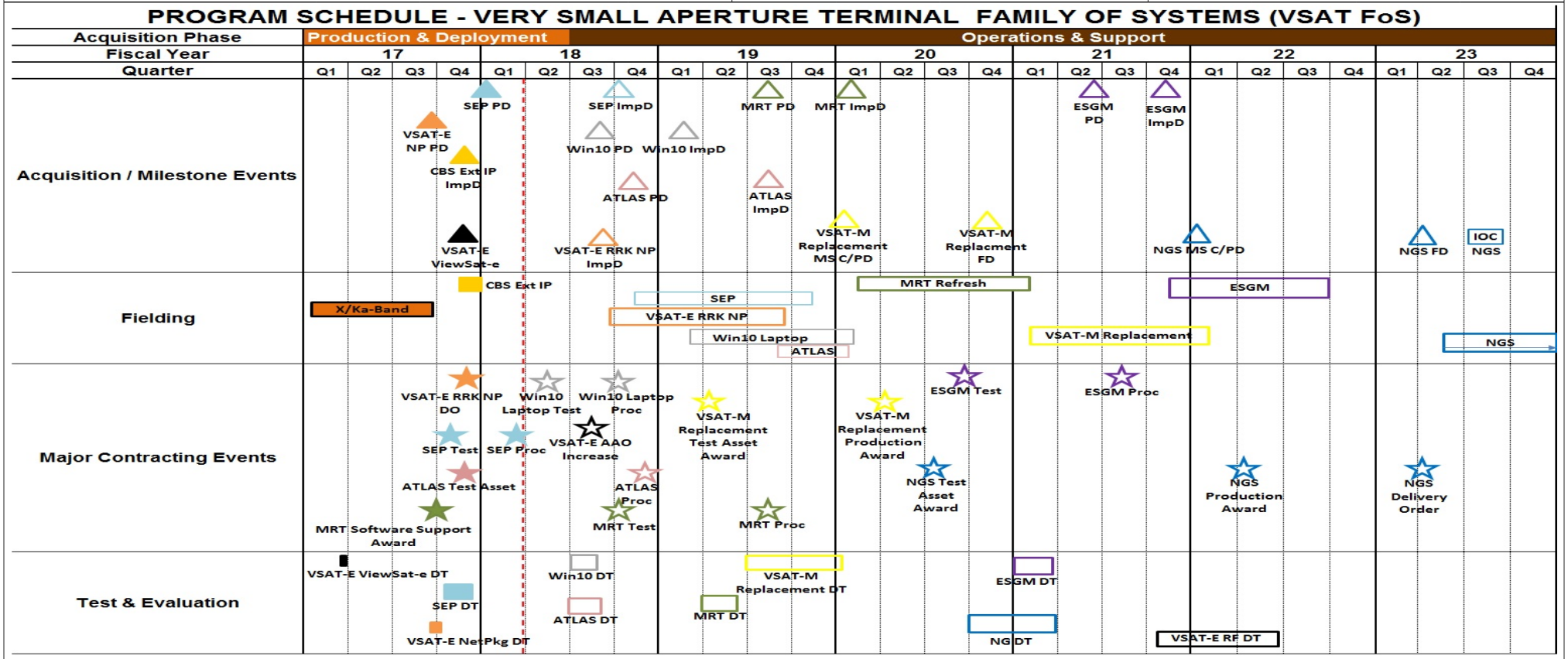
PROGRAM SCHEDULE - VERY SMALL APERTURE TERMINAL FAMILY OF SYSTEMS (VSAT FoS)



ATLAS: Adaptable Tactical Lightweight Antenna System (formerly VSAT ISA)
ESGM: Enterprise Satellite Gateway Modem
FD: Fielding Decision
ImpD: Implementation Decision
MRT: Master Reference Terminal
NGS: Next Generation SATCOM
NP: Network Package
PD: Procurement Decision
SEP: Signal Entry Panel (VSAT Large)

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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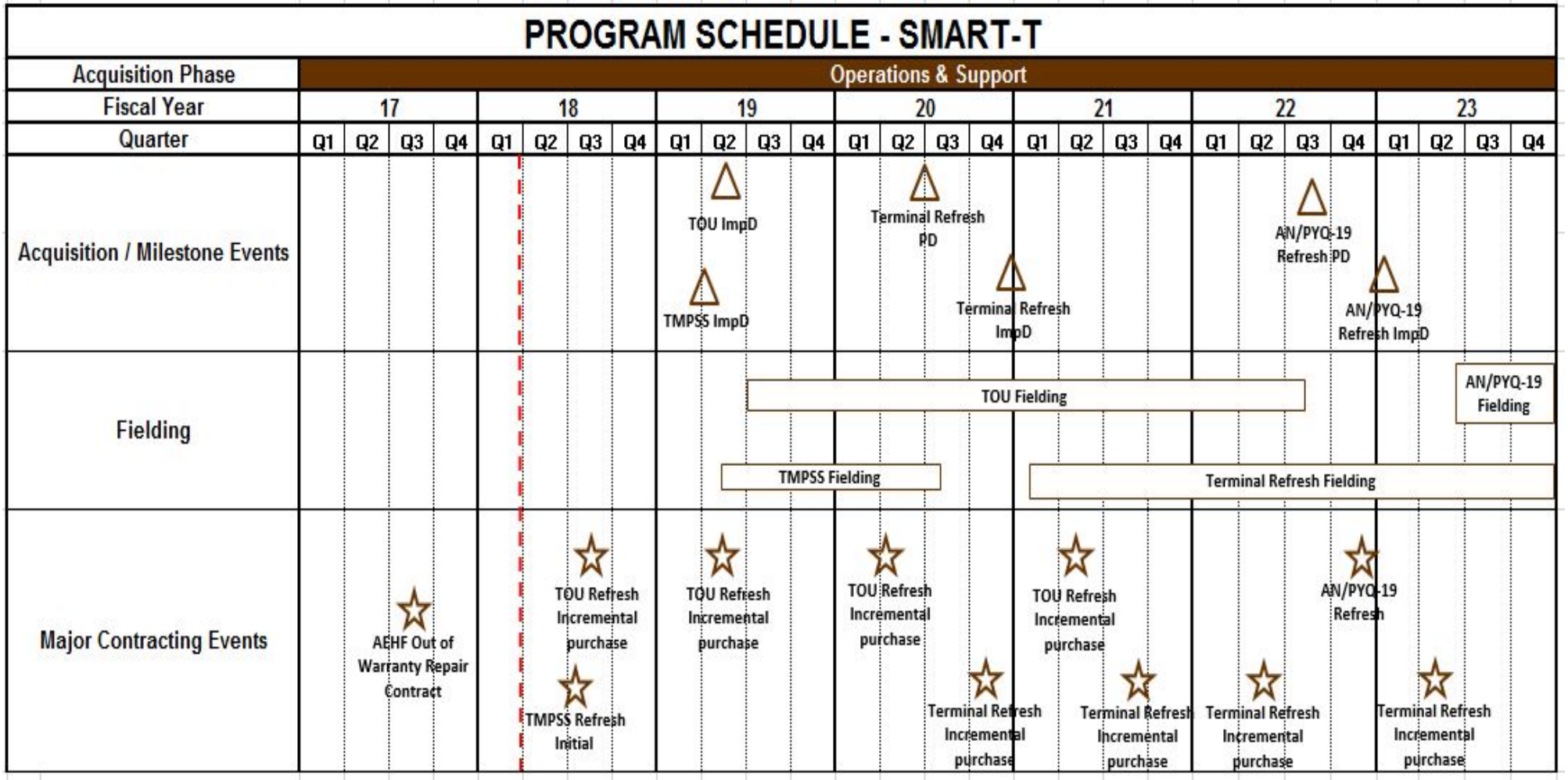

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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Combat Operations Center (COC) Program Schedule

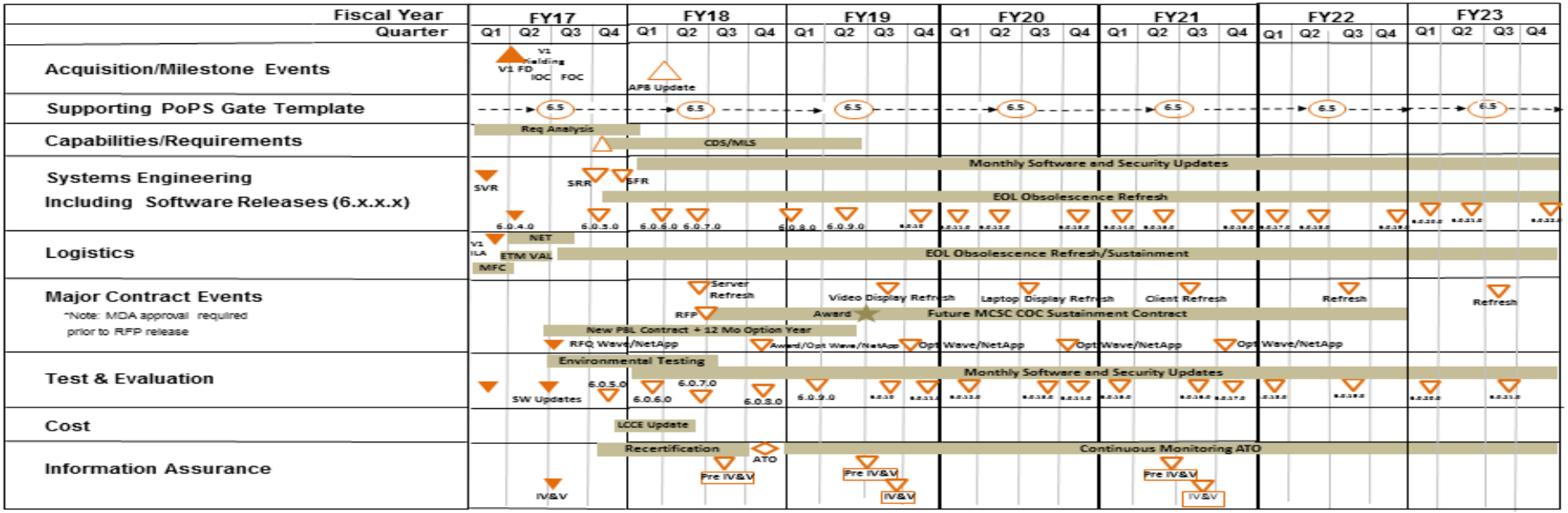

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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Networking On The Move (NOTM) GCV, Air, ITV

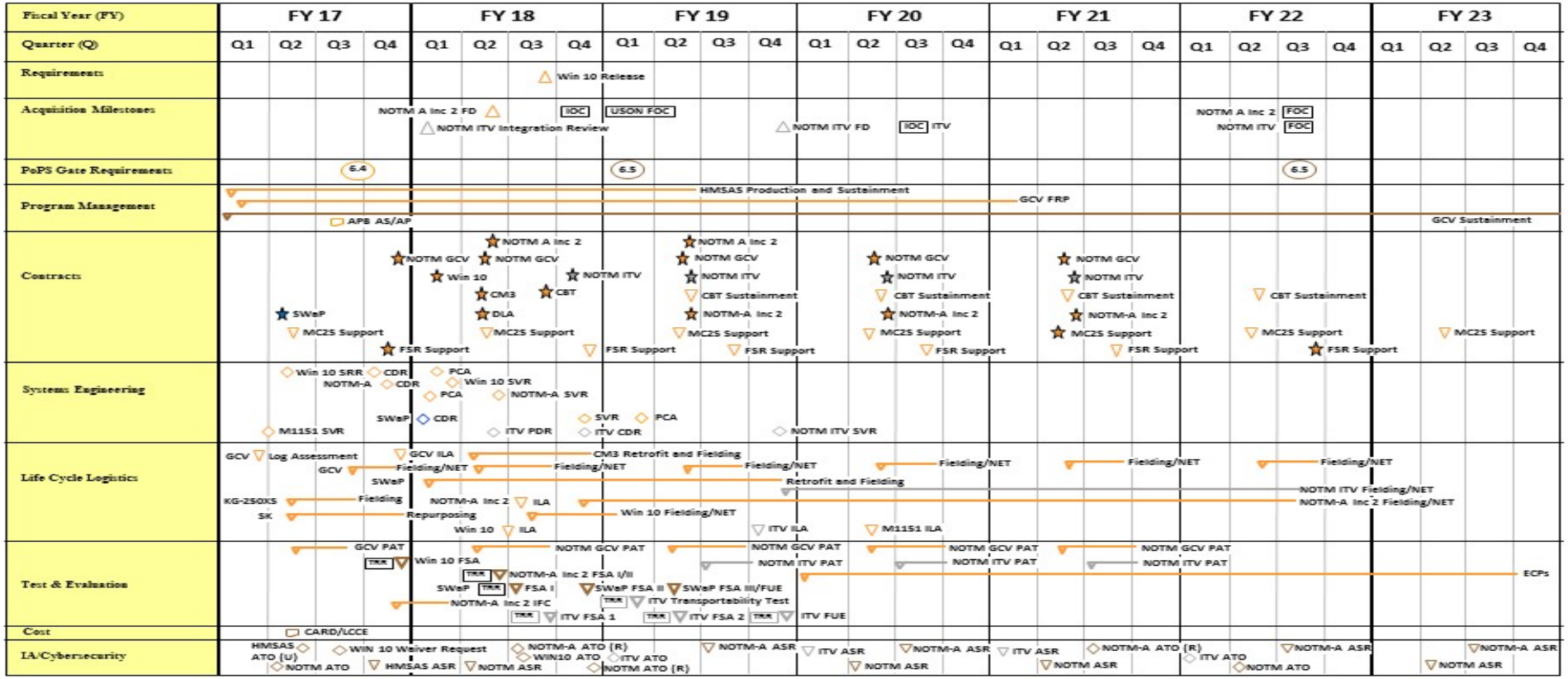

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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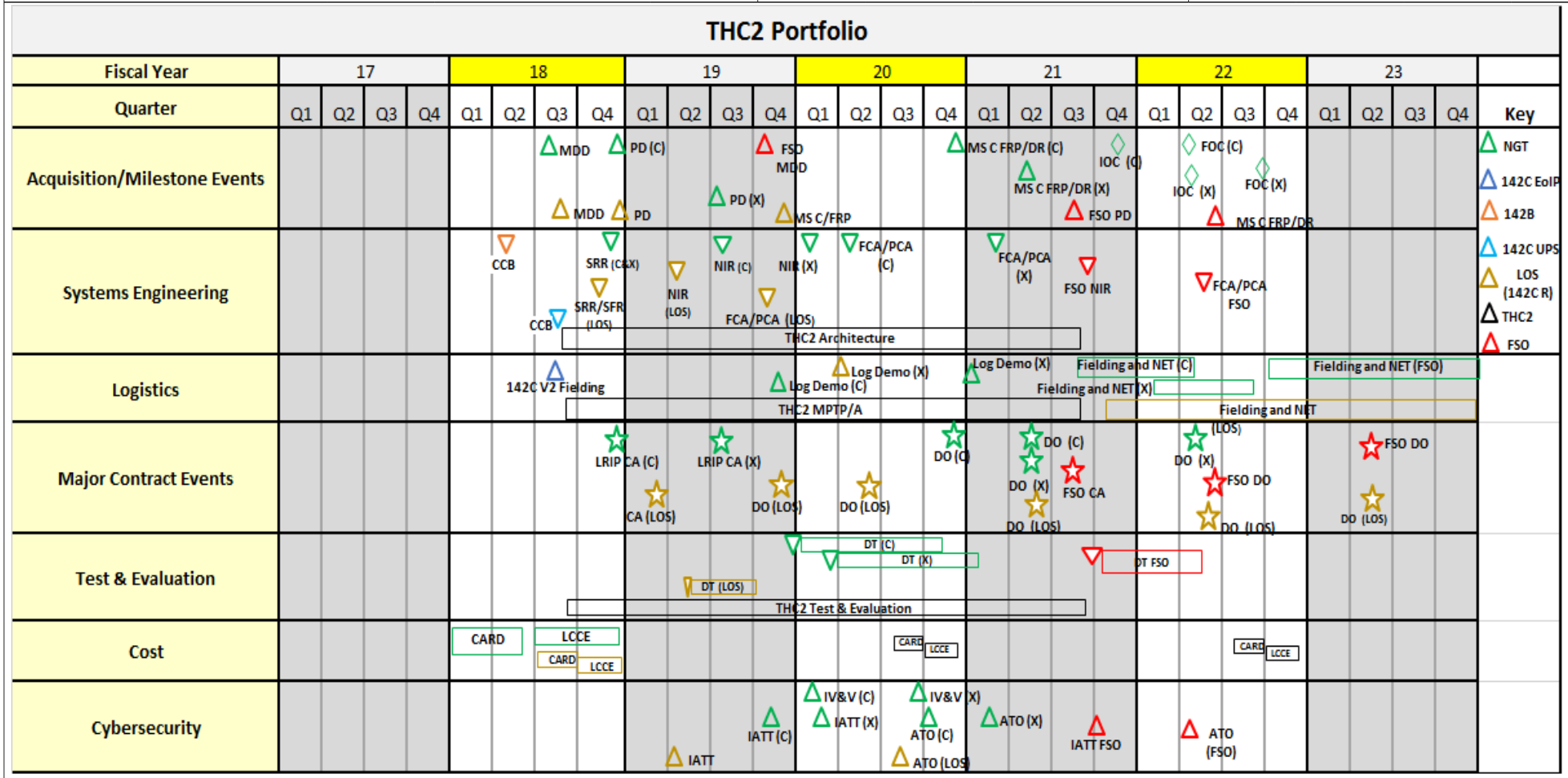

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2275				
TCM MRC-145B IOC	1	2018	1	2018
TCM MUOS Procurement Decision	4	2018	4	2018
TCM MUOS Contract Award	4	2018	4	2018
TCM HFR II Test Assets Contract Award	4	2018	4	2018
TCM MUOS Fielding Decision	1	2018	1	2018
TCM MUOS IOC	1	2019	1	2019
VSAT Signal Entry Panel Fielding	4	2018	4	2019
VSAT Inflatable Satellite Antenna (ATLAS) Procurement	4	2018	4	2018
VSAT WIN 10 Procurement	4	2018	4	2018
VSAT WIN 10 Fielding	1	2019	1	2020
VSAT Inflatable Satellite Antenna (ATLAS) Fielding	3	2019	1	2020
VSAT-E Network Package Refresh Fielding	4	2018	3	2019
VSAT MRT Procurement	3	2019	3	2019
VSAT VSAT-M Replacement Test Asset Procurement	2	2019	2	2019
VSAT VSAT-M Replacement Testing	3	2019	1	2020
SMART-T TMPSS Procurement	3	2018	3	2018
SMART-T TOU Procurement	3	2018	3	2018
SMART-T TMPSS Fielding	2	2019	3	2020
SMART-T TOU 2nd Increment Procurement	2	2019	2	2019
SMART-T TOU Fielding	3	2019	3	2022
TWTS LOS (MRC-142C R) Contract Award	1	2019	1	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TWTS NGT PD (X)	3	2019	3	2019
TWTS NGT LRIP Contract Award (X)	3	2019	3	2019
TWTS LOS (MRC-142C R) MSC/FRP	4	2019	4	2019
TWTS LOS (MRC-142C R) DO	4	2019	4	2019
NOTM-A Inc 2 Fielding Decision	2	2018	2	2018
NOTM-A Inc 2 IOC	4	2018	4	2018
NOTM-ITV Fielding Decision	4	2019	4	2019
NOTM Windows 10 Fielding	3	2018	1	2019
COC Server Refresh Procurement	2	2018	2	2018
COC Video Display Refresh Procurement	3	2019	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy											Date: February 2018	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*				Project (Number/Name) 2276 / *Comms Switching and Control Sys*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
2276: *Comms Switching and Control Sys*	42.703	1.791	2.799	1.675	-	1.675	1.778	1.815	1.653	1.686	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

The FY 2019 funding request was decreased by $1.124M due to transition of Network Planning & Management (NPM) into sustainment and reduced development efforts for Combat Data Network (CDN) hardware updates.

A. Mission Description and Budget Item Justification

(U) Network Planning & Management (NPM) is a portfolio of communications planning and Network Management applications for use throughout the Marine Air-Ground Task Force (MAGTF). NPM consists of items such as the Systems Planning Engineering and Evaluation Device (SPEED). NPM provides the Marine Forces (MARFOR) component planners with the ability to conduct high-level planning; detailed planning and engineering; monitoring; control and reconfiguration; and spectrum planning and management in support of Combatant Commander (COCOM) and Commander, Joint Task Force (CJTF) operations. SPEED provides High Frequency (HF) predictions, Line of Site (LOS) propagation, Radio Coverage Analysis (RCA), Satellite Planning, Command and Control Personal Computer (C2PC) track interface, interference and de-confliction analysis, spectrum management, Radio Guard Charts, Comm-On-The-Move (COTM), and T/E (training & education) and force structure management. Decrease of $0.905M from FY18 to FY19 reflects program transition to sustainment.

(U) Tactical Voice Switching System (TVSS): The TVSS is a modular Integrated Services Digital Network (ISDN) circuit switch capable system that combines voice and Voice Over Internet Protocol telecommunications, multiplexing, transmission encryption, and group modem capabilities in one system for command, control, administrative, and logistic voice communications. Facilitates secure and non-secure voice, circuit switching functions, and network routing and management functions with current fielded tactical systems of the military services. Interoperates with joint, coalition, and host nation networks, and operates in unclassified and classified environments.

(U) Combat Data Network (CDN), formerly Data Distribution System - Modular (DDS-M): The CDN provides the commander a modular, integrated, and interoperable Internet Protocol (IP)- based LAN and WAN data networking capability that forms the data communications backbone and data communications support to organizations within a MAGTF. The CDN provides extension of the Defense Information System Network (DISN), Secret Internet Protocol Router Network (SIPRNet), Sensitive But Unclassified (SBU), Non-secure Internet Protocol Router Network (NIPRNet) as well as a Coalition networking capability and access to strategic, supporting establishments, joint and other service component tactical data networks for Marine Corps Tactical Data Systems (TDSs) and other CDN. The CDN provides Marine Corps maneuver elements with a modular and scalable IP data transport capability that will replace, supplement and be used with existing legacy data systems through the integration of computers, routers, data switches and cabling, radio net interface units, modems, link encryption devices, and patch panels. Uninterrupted Power Supplies (UPS) provide for emergency power and continuity of operations. The CDN can operate from the SBU up to the Top Secret/Sensitive Compartmented Information (TS/SCI) level and contains integral In-line Network Encryption (INE) device supporting IP Security (IPSec) and Virtual Private Networking (VPN). Decrease

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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of $0.220M from FY18 to FY19 reflects completion of server design, testing, and procurement of prototypes and test articles and transition to reconfiguration of Battalion and below CDN systems to reduce size, weight, and power (SWaP).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: NPM: Product Development	0.519	0.905	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Decrease of $0.905M from FY18 to FY19 reflects program transition to sustainment. ***FY 2018 Plans:*** Completes development of additional enhancements and capabilities within the System Planning Engineering and Evaluation Device (SPEED) software testing. ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The FY 2019 funding request was decreased by $1.124M due to transition of Network Planning & Management (NPM) into sustainment and reduced development efforts for Combat Data Network (CDN) hardware updates.					
Title: TVSS: Management Services	0.047	0.067	0.068	0.000	0.068
Articles:	-	-	-	-	-
FY 2018 Plans: Continue system accreditation with annual cyber security testing. ***FY 2019 Base Plans:*** Continue system accreditation with annual cyber security testing. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: CDN: Product Development	0.360	0.521	0.654	0.000	0.654
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Description: Decrease of $.133M from FY18 to FY19 reflects transition to Network Optimization and reconfiguration efforts supported by Management Services contract to reduce size, weight, and power (SWaP) requirements of the CDN systems. ***FY 2018 Plans:*** Continue development and implementation of required hardware includes VMware and Small Form Factor. ***FY 2019 Base Plans:*** Continue development and implementation of required hardware for Small Form Factor. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: CDN: Test and Evaluation	0.593	0.610	0.444	0.000	0.444
Articles:	-	-	-	-	-
FY 2018 Plans: Continue support for joint interoperability test certification efforts demonstrated through DoD Interoperability Communication Exercises for equipment that includes VMware and Small Form Factor. ***FY 2019 Base Plans:*** Continue support for joint interoperability test certification efforts demonstrated through DoD Interoperability Communication Exercises for Small Form Factor. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: CDN: Management Services	0.272	0.696	0.509	0.000	0.509
Articles:	-	-	-	-	-
FY 2018 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Continue FFRDC systems engineering efforts, interoperability analysis, acquisition planning, support for technology research and obsolescence. Initiate FFRDC efforts in support of Network Optimization and reconfiguration efforts to reduce size, weight, and power (SWaP) requirements of the CDN systems. ***FY 2019 Base Plans:*** Continue FFRDC efforts in support of Network Optimization and reconfiguration efforts to reduce size, weight, and power (SWaP) requirements of the CDN systems. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	1.791	2.799	1.675	0.000	1.675

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/4634-1: *TVSS*	3.378	8.350	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	198.968
• PMC/4634-2: *CDN*	26.967	44.628	35.844	-	35.844	29.944	35.757	36.355	37.128	Continuing	Continuing

Remarks

D. Acquisition Strategy

(U) Network Planning and Management (NPM): NPM will maximize use of existing Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) products. NPM will continue to be upgraded as technology advances. Major focus will be on the incorporation of additional capabilities and functionality into the SPEED software to meet user requirements. R&D effort will focus on the development, integration, and testing of improved versions of existing capabilities. Program will transition to sustainment in FY19.

(U) Tactical Voice Switching System (TVSS) (formerly Transition Switch Module (TSM)): TVSS will maximize use of existing COTS, GOTS, and Government-Furnished Equipment (GFE). TVSS hardware and software will continue to be upgraded and improved as technology advances. Major focus will be on interoperability and compatibility with existing systems and components in the Marine Corps, as well as Joint and Coalition forces. R&D effort will focus on integration and testing of improved versions of existing components.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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(U) Combat Data Network (CDN), formerly Data Distribution System - Modular (DDS-M): CDN will maximize use of existing COTS, GOTS, and GFE. CDN hardware and software will continue to be upgraded and improved as technology advances. Major focus will be on interoperability and compatibility with existing systems and components in the Marine Corps, as well as Joint and Coalition forces. R&D effort will focus on integration and testing of improved versions of existing components. CDN may reuse other Services' development and utilize external contracts that satisfy requirements and analysis of alternatives.

E. Performance Metrics

Milestone reviews and technical reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2276 / *Comms Switching and Control Sys*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NPM (SPEED S/W Development)	WR	NSWC : Crane, IN	0.780	0.189	Nov 2016	0.165	Nov 2017	0.000		-		0.000	0.000	1.134	-
NPM (SPEED S/W Development)	C/CPFF	NSWC2 : Crane, IN	0.230	0.000		0.740	Jun 2018	0.000		-		0.000	0.000	0.970	-
CDN Development Efforts	WR	MCTSSA : Camp Pendleton, CA	0.000	0.360	Jul 2017	0.000		0.000		-		0.000	0.000	0.360	-
CDN Development Efforts	C/CPFF	NAWC-AD : Patuxent River, MD	0.000	0.000		0.521	Apr 2018	0.654	Apr 2019	-		0.654	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	Various : Various	28.246	0.000		0.000		0.000		-		0.000	0.000	28.246	-
		Subtotal	29.256	0.549		1.426		0.654		-		0.654	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	5.696	0.000		0.000		0.000		-		0.000	0.000	5.696	-
		Subtotal	5.696	0.000		0.000		0.000		-		0.000	0.000	5.696	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CDN Testing	WR	SSC PAC : San Diego, CA	0.466	0.515	Dec 2016	0.530	Dec 2017	0.364	Dec 2018	-		0.364	Continuing	Continuing	Continuing
CDN Integration testing	WR	JITC : Ft. Huachuca, AZ	0.000	0.078	Jan 2017	0.080	Jan 2018	0.080	Jan 2019	-		0.080	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	Various : Various	1.569	0.000		0.000		0.000		-		0.000	0.000	1.569	-
		Subtotal	2.035	0.593		0.610		0.444		-		0.444	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NPM	FFRDC	MITRE : Stafford, VA	0.000	0.330	Sep 2017	0.000		0.000		-		0.000	0.000	0.330	-
TVSS	FFRDC	MITRE : Stafford, VA	1.034	0.047	Dec 2016	0.067	Dec 2017	0.068	Dec 2018	-		0.068	0.000	1.216	-
CDN	FFRDC	MITRE : Stafford, VA	0.565	0.272	Dec 2016	0.696	Dec 2017	0.509	Dec 2018	-		0.509	0.000	2.042	-
Prior Year Cummulative Funding	FFRDC	MITRE : Stafford, VA	4.117	0.000		0.000		0.000		-		0.000	0.000	4.117	-
		Subtotal	5.716	0.649		0.763		0.577		-		0.577	0.000	7.705	N/A

Remarks

CDN product development transitions to MITRE FFRDC support in FY18.

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	42.703	1.791		2.799		1.675		-		1.675	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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TVSS (FY17 – FY23)

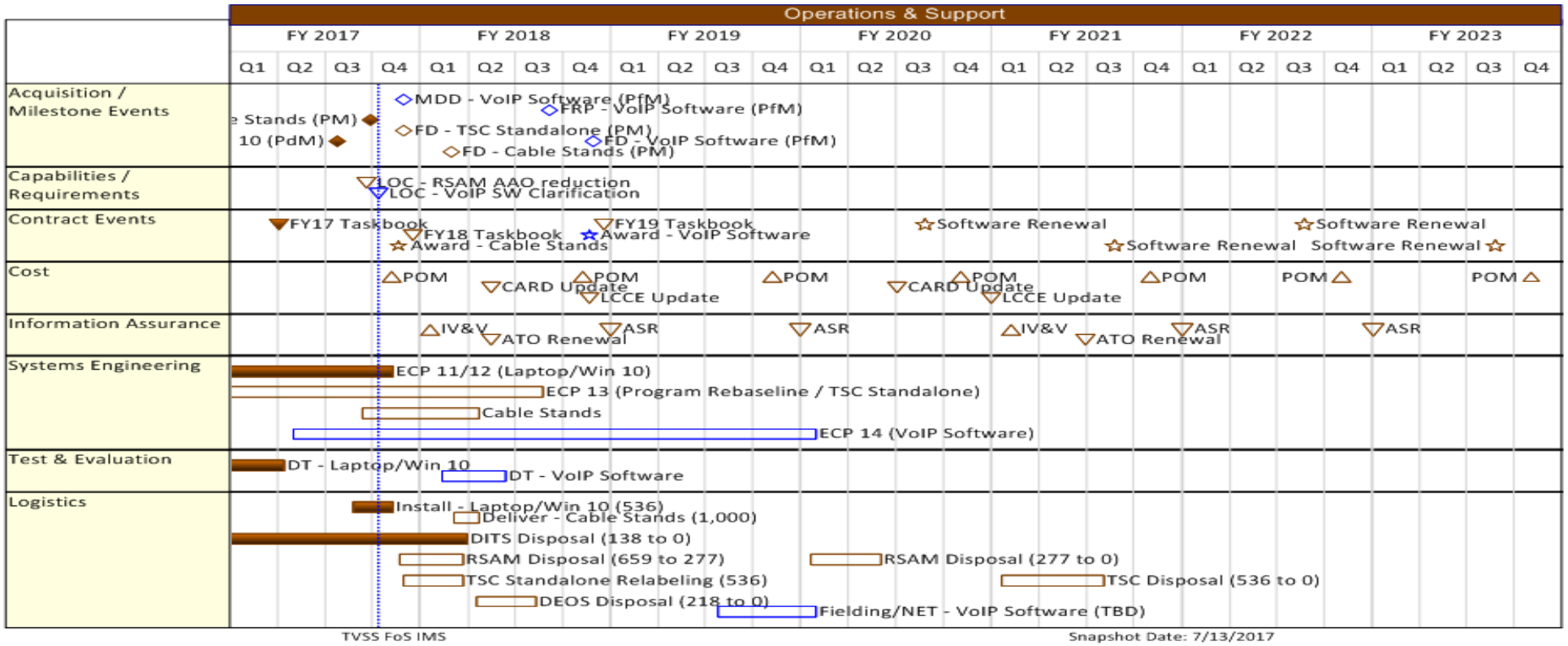

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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CDN (FY17 – FY23)

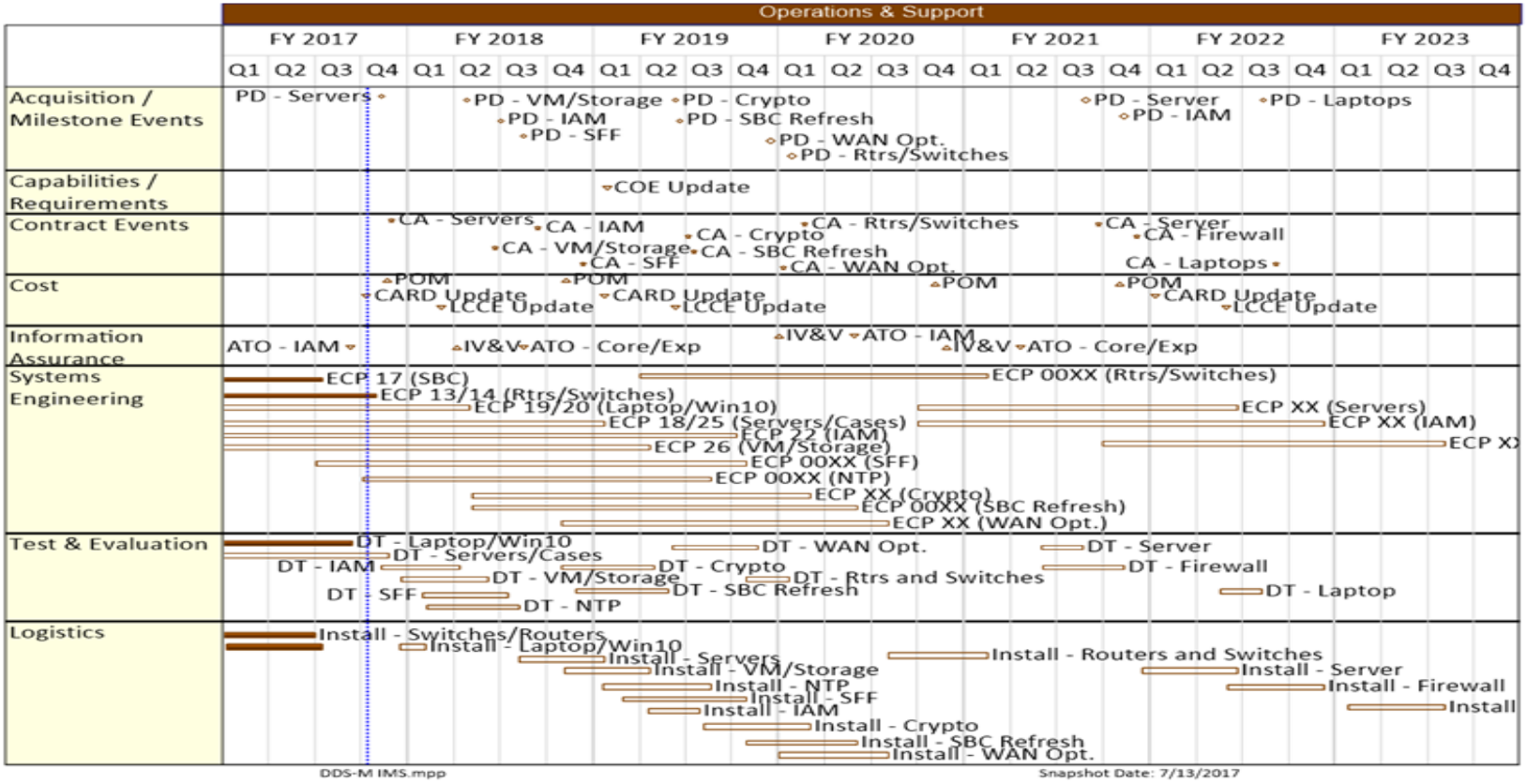

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2276				
CDN Procurement Decision (PD) Servers	4	2017	4	2017
CDN Contract Award (CA) Servers	4	2017	4	2017
CDN PD IAM	2	2018	2	2018
CDN PD - VMware	2	2018	2	2018
CDN Install VMware	4	2018	2	2019
CDN DT Small Form Factor (SFF)	1	2018	3	2018
CDN DT Crypto	4	2018	2	2019
CDN DT SBC Refresh	4	2018	2	2019
CDN Install Laptop	4	2017	1	2018
CDN Install Servers	3	2018	1	2019
TVSS Fielding Decision TSC Standalone	4	2017	4	2017
TVSS CA Cable Stands	4	2017	4	2017
TVSS Fielding Decision Cable Stands	1	2018	1	2018
TVSS Full Rate Production Decision (FRP) VoIP Software	3	2018	3	2018
TVSS CA VoIP	4	2018	4	2018
TVSS Fielding Decision VoIP Software	4	2018	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy											Date: February 2018	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*				Project (Number/Name) 2277 / *System Engineering and Integration*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
2277: *System Engineering and Integration*	43.343	4.763	8.314	4.370	-	4.370	13.010	4.930	5.029	5.133	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY19, Marine Civil Information Management System (MARCIMS), Public Affairs System (PAS) and Military Information Support Operations (MISO) funding has been realigned to project 3772, Information Related Capabilities. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.

A. Mission Description and Budget Item Justification

This project provides funds for engineering, test, and evaluation activity, which ensures that the systems being developed within the Program Element (PE) employ consistent standards for interoperability and to the maximum extent feasible use of hardware and software which is uniform and standard across programs.

Expeditionary Energy Office (E2O): Energy is a top priority for the USMC and one of the six pillars of Modernization for the Corps identified by the Commandant. In 2009, the Commandant established the USMC Expeditionary Energy Office (E2O), with the mission to analyze, develop, and direct the Marine Corps' energy strategy in order to optimize expeditionary capabilities across all warfighting functions. E2O's role is to advise the Marine Requirements Oversight Council (MROC) on all energy and resource related requirements, acquisitions, and programmatic decisions. This office and funding directly support execution of the USMC Expeditionary Energy Strategy and Implementation Plan (Mar 2011), and priorities identified in the USMC Expeditionary Energy Water and Waste Initial Capabilities Document/Capabilities Based Assessment (Sep 2011), as well as Science and Technology Objectives identified in the 2012 USMC S&T Strategic Plan. The Marine Corps program aligns with the Commandant's Planning Guidance 2010, the National Defense Authorization Act 2009, DoD directives and SECNAV goals. This funding will support the achievement of the Strategy, and the activities of the USMC Expeditionary Energy Concepts process, managed by the E2O.

Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is a Joint Chiefs-of-Staff (JCS)/DoD-mandated program for joint development, implementation, and testing of tactical data links and US Message Text Format (MTF) under the direction of the Defense Information Systems Agency (DISA) and Office of the Secretary of Defense/ Networks and Information Integration (OASD/NII) per the Commander Joint Chiefs of Staff (CJCSI) Instructions 6610.01C and CJCS16241.04 respectively. This effort also covers interoperability and testing of tactical message standards such as MILSTD 6017 Variable Message Format used between the US Army and USMC; and Coalition message formats the Joint Command, Control, Consultation Information Exchange Data Model (JC3IEDM). Responsible for the development of Net Centric standards (XML, Web Services) to meet requirements of USMC/DoD/Coalition Net Centric Data Strategies. Efforts in this area include NATO Coalition interoperability initiatives, Army/Marine Corps Board support, and interoperability testing and certification to include cross domain.

Systems Engineering, Integration and Coordination (SEIC) is MCSC Chief Engineer's systems engineering and integration program. SEIC provides the decision support tools and engineering analysis resources needed to assess, identify and resolve Marine Air Ground Task Force (MAGTF)inter-systems' SoS issues and challenges. SEIC supports DC CD&I, DC PP&O, DC A, DC I&L, DC M&RA, HQMC C4, and HQMC INT in the analysis, evaluation, and assessment of MAGTF Systems and

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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SoS requirements. SEIC centralized management of C4ISR programs allows the implementation of systems engineering certification process in support of milestone decision approval; a requirements and functional analysis process enabling system of systems engineering and an overarching C4ISR systems architecture, and a product realization process to support budget decisions. SEIC engineering conducts functional analyses for emergent system of systems challenges and ensures seamless integration and maximum interoperability of materiel across USMC, Naval, Joint, and DoD programs consistent with the Commandant's Vision and Strategy 2025.

Marine Civil Information Management System (MARCIMS) is a system of systems comprised of people, process and technology that operates in the full Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment. It is a force multiplier for the commander that allows him to leverage the process of Planning, Collection, Consolidation, Analysis, Production, and sharing of civil information in order to support the visualization and understanding of the civil environment to the military commander's decision making process. This program transitions from C2277 to C3772 in FY19.

Public Affairs System (PAS) provides the Marine Air Ground Task Force (MAGTF) and the broader Marine Corps the capability to research, understand and affect the information environment. PA Marines and Systems enable commanders at all levels and across the range of military operations to engage domestic and foreign publics whose trust, confidence, and understanding are mission critical. The Public Affairs Systems (PAS) AAP identifies and fields materiel solutions required to research and plan communication initiatives, acquire still and video visual information, produce and disseminate communication products, and assess the effects of communication initiatives within the information environment. The program maintains an evolutionary approach to acquisitions, and leverages commercial industry-standard non-developmental items to provide the best value to the Marine Corps, while keeping PA Marines appropriately equipped to understand and affect the information environment. This effort supports research and evaluate solutions to modernize the Public Affairs Still Acquisition System into a single handheld device with the capability to acquire, edit and transmit still and video imagery and engage publics via traditional and social media. This program transitions from C2277 to C3772 in FY19.

The Military Information Support Operations (MISO)Family of Systems (FOS), which consists of the Fly-Away Broadcast System (FABS), Next-Generation Loud Speaker (NGLS), Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MISN), provides the Marine Air Ground Task Force (MAGTF) Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage. The MISO was established in response to multiple Marine Requirements Oversight Council Memorandums, and the approval of a MISO Organizational and Operational (O&O) Concept, 16 June 2015. MISO capabilities are critical to the success of the MAGTF mission, enabling commanders to shape the information environment, counter enemy propaganda, misinformation, disinformation, and adversarial narratives. The Signature Management (SIGMAN) capability will support MAGTF Operations with a baseline capability to include Own-force signature monitoring and assessment, Electromagnetic signature masking and projection, and physical decoys. This program transitions from C2277 to C3772 in FY19.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Expeditionary Energy Office (E2O)	2.156	2.199	2.202	0.000	2.202
Articles:	-	-	-	-	-
FY 2018 Plans:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Continue to support the USMC Expeditionary Energy Strategy and Implementation Plan, and priorities identified in the USMC Expeditionary Energy Water and Waste Initial Capabilities Document/Capabilities Based Assessment, as well as Science and Technology Objectives identified in the 2012 USMC S&T Strategic Plan. Using these priority roadmaps, E2O will invest in R&D programs to advance Strategy goals. Priority areas for investment include, but are not limited to: Energy harvesting; hybrid power; efficient heating and cooling of people, equipment and water; energy storage; energy efficient vehicles; energy metering and monitoring and decision tools; energy efficient shelters and sustainment. ***FY 2019 Base Plans:*** - Continue to support the USMC Expeditionary Energy Strategy and Implementation Plan, and priorities identified in the USMC Expeditionary Energy Water and Waste Initial Capabilities Document/Capabilities Based Assessment, as well as Science and Technology Objectives identified in the 2012 USMC S&T Strategic Plan. Using these priority roadmaps, E2O will invest in R&D programs to advance Strategy goals. Priority areas for investment include, but are not limited to: Fuel distribution, Energy harvesting; hybrid power; efficient heating and cooling of people, equipment and water; energy storage; energy efficient vehicles; energy metering and monitoring and decision tools. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: JINTACCS: JCS and DoD CIO Data Links Testing	0.582	0.572	0.570	0.000	0.570
Articles:	-	-	-	-	-
Description: Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is a United States military program for the development and maintenance of tactical information exchange configuration items (CIs) and operational procedures. It was originated to ensure that the command and control (C2 and C3) and weapons systems of all US military services and NATO forces would be interoperable. MARCORSYSCOM Systems Engineering, Interoperability Architectures, and Technology direct the JINTACCS Program. Created as a non-acquisition R&D engineering program it provides for critical engineering services in several areas. JINTACCS is essential to USMC development and maintenance of tactical data exchange standards (Link 16,					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
VMF, MTF, etc.), maintenance of C2 systems interoperability issues, development of Net Centric standards (XML, Web Services) to meet requirements of DoD/USMC Net Centric Data Strategy, and participation in Marine Corps, Joint, and Coalition Interoperability Certification testing to DoD/JCS/USMC/ NATO requirements in an ever-changing cyber environment. Requirements annotated in IT Budget Submit (NC-36). Increased involvement with the Army Marine Corps Board (AMCB, 3 Star Charter)), NATO Coalition Interoperability Assurance and Validation (CIAV) and Cross Domain Solution (CDS) certification. ***FY 2018 Plans:*** -Continue to review and update all IT Standards applicable to the USMC and maintain the architectural data environment to ensure all developed solution architectures are associated with the appropriate technical IT standards in their DoDAF Standards View. -Continue to lead the Army - Marine Corps C2 interoperability Systems Engineering IPT to align the use of tactical messaging standards to create interoperability between the DoD ground force systems FBCB2/JTCW (VMF), GCCS (OTH Gold), TBMCS/AFATDS (USMTF), and aviation tactical data links (Link 16/22). -Continue to lead the USMC involvement in NATO forums to ensure USMC tactical C2 systems remain interoperable. -Continue to participate in the development and maintenance of STANAG 4677 and associated architectures to expand interoperability to forces at battalion and below. -Continue to develop and test the implementation of a Multi-Media Gateway (MMG) solution to bridge existing voice, video, and data network standards across tactical and garrison C2 networks through the continued engineering and certification of tactical cross-domain solutions. -Continue to engineer and architect garrison and tactical network standards to continue the MCEN Cyber Vulnerability assessment and support the risk reduction activities to integrate tactical network data exchanges into a Cyber Common Operational Picture to support MARFORCYBER, MCNOSC, and HQMC C4 initiatives through the continued development of MCEN architectures. -Continue implementation of Military Standards for VMF-XML and MTF-XML providing standardized translations of tactical data for seamless, lossless C2 information sharing in net centric operations. ***FY 2019 Base Plans:*** -Initiate to serve as the Marine Corps principal activity for review of Joint Service and NATO interface change proposals (ICPs) and requests for exception (RFEs) to existing TDL, tactical data message, and symbology standards. Reviewed, assessed, staffed, and presented Service positions on 100+ ICPs and RFEs.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Initiate tactical data link and variable message format subject matter expert support to 10 Marine Corps ground systems and two aviation systems acquired by NAVAIRSYSCOM to ensure adherence to standards and to enable interoperability with Joint and Allied command and control and weapon systems. - Initiate Marine Corps equities representation in Joint and Allied Service TDL and tactical data message forums, including participation in the Joint Multi-TDL Configuration Control Board and the Joint Multi-TDL Standards Working Group. - Initiate architectural data environment needed to represent that developed system architectural solutions are associated and traceable to desired capabilities and military standards governing TDL and tactical data message exchange. - Continue to lead the Army-Marine Corps C2 Interoperability Systems Engineering Integrated Process Team (IPT) to align the use of tactical messaging standards between DoD ground, aviation, and intelligence systems. - Continue to participate in the development of STANAG 4677 to establish ground rules for battalion and below cross domain information exchange solutions. - Continue to assess implementation of potential solutions to bridge existing voice, video, and data network standards across tactical and garrison command and control networks. - Continue to assess implementation and potential effects of transition of tactical data links and tactical data messages to extensible markup language (XML)-based schemas, thus supporting interagency and joint/ multinational information exchange. - Continue to participate in National Information Exchange Model (NIEM) information exchange IPTs and working groups. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: SEIC: Engineering and Technical Support	1.770	1.973	1.598	0.000	1.598
Articles:	-	-	-	-	-
FY 2018 Plans: - Initiate technical and engineering support to the development of the 2018 Afloat MAGTF C4 Required Capabilities (AMC4RC) Letter. - Continue to contribute to the OPNAV N9 & N2/N6 Blue-In-Support-Of-Green (BISOG) program development.					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Continue engineering support to the development of USMC input to OUSD AT&L's Joint C2 Capability Area FY18/19 Sustainment & Modernization Plan and Plan Build Workshop - Initiate integration MAGTF C2 systems and C4 services with shipboard C2 architectures and C4ISR infrastructures in support of 11th, 13th, 22nd, 26th and 31st MEU deployments via DGSIT. - Continue integration testing with PEO C4I & SPAWAR to integrate MCEN Services and MAGTF C2 Systems into the Navy's Consolidated Afloat Network Enterprise Services (CANES) environment aboard the LHA-6 and LPD-17 class amphibious assault ships. - Continue to baseline and assess options to address gaps within the Information Exchange Capabilities of the MAGTF. - Continue to manage and expand the Engineering Knowledge Management system to provide consumer focused support to the engineering competency in a configuration controlled electronic library system. ***FY 2019 Base Plans:*** - Initiate technical and engineering support to the development of the 2019 Afloat MAGTF C4 Required Capabilities (AMC4RC) Letter. - Continue to contribute to the OPNAV N9 & N2/N6 Blue-In-Support-Of-Green (BISOG) program development. - Continue engineering support to the development of USMC input to OUSD AT&L's Joint C2 Capability Area FY19/20 Integration Workshop - Initiate integration MAGTF C2 systems and C4 services with shipboard C2 architectures and C4ISR infrastructures in direct support of 15th, 11th, 22nd, 24th and 31st MEU deployments via DGSIT. - Conduct focused integration testing with PEO C4I & SPAWAR to integrate MCEN Services and MAGTF C4I Systems into the Navy's follow-on version of Consolidated Afloat Network Enterprise Services (CANES) environment aboard the LHD, LHA-6, LPD and LSD class amphibious assault ships. - Continue to baseline and assess options to address gaps within the Information Exchange Capabilities of the MAGTF. - Continue to manage and expand the Engineering Knowledge Management system to provide consumer focused support to the engineering competency in a configuration controlled electronic library system. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: MARCIMS: Marine Civil Information Management System Support	0.164	0.422	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Articles:	-	-	-	-	-
FY 2018 Plans: -Initiate expansion of cloud services to accommodate additional users across the coalition (NATO, etc.) and other government agencies (NGA, etc.), and the joint service (Army Reserves) -Initiate updates to existing MARCIMS database and architecture. -Initiate development required for the MARCIMS 2.0 implementation and Marine Corps Force (MCF) 2025. ***FY 2019 Base Plans:*** -Program transitions to C3772 ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $0.422M from FY 2018 to FY 2019 due to the program transitions from C2277 to C3772 in FY19.					
Title: Public Affairs System (PAS): Product Development	0.091	0.093	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: - Continue the research and evaluation of solutions to modernize the Public Affairs Live Media Engagement System (PALMES) with the capability to transmit imagery and engage publics via traditional and social media via Military Satellite Communications (MILSATCOM). These actions will include the evaluation of device solutions and research of information assurance requirements to accredit the Public Affairs transmission capability. ***FY 2019 Base Plans:*** - Program transitions to C3772 ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $0.093M from FY 2018 to FY 2019 due to the program transitions from C2277 to C3772 in FY19.					
Title: Military Information Support Operations (MISO): Product Development	0.000	3.055	0.000	0.000	0.000
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Description: The MISO Family of Systems (FOS), which consists of the Fly-Away Broadcast System (FABS), Next-Generation Loud Speaker (NGLS), Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MISN), provides the Marine Air Ground Task Force (MAGTF) Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage. Funds increase from FY17 to FY18 initiates product development of the Fly-Away Broadcast System (FABS) in preparation for a MS B decision. Funds transition to C3772 in FY19. ***FY 2018 Plans:*** Initiate product development of the Fly-Away Broadcast System (FABS) in preparation for a MS B decision. - Complete a production design of the FABS - Validate FABS production requirements - Manage FABS technical risk - Update cost estimates - Define system support requirements ***FY 2019 Base Plans:*** - Program transitions to C3772 ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $3.055M from FY 2018 to FY 2019 due to the program transitions from C2277 to C3772 in FY19.					
Accomplishments/Planned Programs Subtotals	4.763	8.314	4.370	0.000	4.370

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/4620a: *MARCIMS*	0.227	0.235	0.296	-	0.296	0.000	0.302	0.000	0.308	Continuing	Continuing
• PMC/4620b: *Public Affairs Systems*	0.929	1.913	0.682	-	0.682	0.691	0.710	0.722	0.736	Continuing	Continuing
• PMC/4620c//: *MISO*	0.000	0.000	2.976	-	2.976	8.364	9.924	9.938	7.853	Continuing	Continuing

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Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

MARCIMS will continue to support and sustain the current baseline system, while employing incremental changes to ensure that the system not only meets current requirements per the Letter of Clarification, but also allows for a more user friendly system. MARCIMS plans to begin development of MARCIMS 2.0 in a partnership with ONR, while simultaneously maintaining the current and approved version of the system.

Public Affairs System will maximize the utilization of commercial-off-the-shelf devices and software to provide best overall performance solutions to the warfighter with minimal developmental cost and schedule investments.

MISO will complete a production design of the FABS, validate production requirements, manage FABS technical risk and define system support requirements in FY18, leading to a MS B decision in Q2 FY18, MS C / LRIP decision in Q4 FY19, and an FRP decision in Q3 FY20.

E. Performance Metrics

Technical and program reviews.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	8.980	0.000		0.000		0.000		-		0.000	0.000	8.980	-
PAS	WR	SSC - PAC : San Diego, CA	0.195	0.091	Mar 2017	0.093	Mar 2018	0.000		-		0.000	Continuing	Continuing	Continuing
MISO	FFRDC	Johns Hopkins University : Laurel, MD	0.000	0.000		0.500	Dec 2017	0.000		-		0.000	0.000	0.500	-
MISO	WR	NAVAIR : Pax River, MD	0.000	0.000		1.515	Apr 2018	0.000		-		0.000	0.000	1.515	-
MISO	WR	SSC-PAC : San Diego, CA	0.000	0.000		1.040	Apr 2018	0.000		-		0.000	0.000	1.040	-
		Subtotal	9.175	0.091		3.148		0.000		-		0.000	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative	Various	Not Specified : Not Specified	18.443	0.000		0.000		0.000		-		0.000	0.000	18.443	-
MARCIMS	WR	NSWC : Indian Head, MD	0.053	0.164	Feb 2017	0.422	Feb 2018	0.000		-		0.000	Continuing	Continuing	Continuing
MAGTF SEI&C	C/FFP	TBD : Various	0.000	0.227	Nov 2016	0.259	Nov 2017	0.000		-		0.000	0.000	0.486	-
MAGTF SEI&C	WR	NSWC : Dahlgren, VA	4.986	0.217	Nov 2016	0.280	Nov 2017	0.230	Nov 2018	-		0.230	Continuing	Continuing	Continuing
MAGTF SEI&C	MIPR	TBD : TBD	0.000	0.529	Nov 2016	0.522	Nov 2017	0.000		-		0.000	0.000	1.051	-
MAGTF SEI&C	MIPR	HHS : TBD	0.000	0.597	Nov 2016	0.712	Nov 2017	0.000		-		0.000	0.000	1.309	-
MAGTF SEI&C	C/FFP	SIMVENTIONS : Stafford, VA	0.061	0.065	Nov 2016	0.065	Nov 2017	0.000		-		0.000	0.000	0.191	-
MAGTF SEI&C	WR	NSWC : DAM NECK, VA	0.000	0.135	Nov 2016	0.135	Nov 2017	0.000		-		0.000	0.000	0.270	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF SEI&C	C/FP	MANTECH : Stafford, VA	0.000	0.000		0.000		1.368	Nov 2018	-		1.368	0.000	1.368	-
JINTACCS	C/FFP	MCTSSA : Camp Pendleton, CA	1.081	0.550	Jan 2017	0.400	Jan 2018	0.295	Jan 2019	-		0.295	0.000	2.326	-
JINTACCS	C/FFP	VMF Analysis : Quantico, VA	0.000	0.000		0.000	Jan 2018	0.225	Jan 2019	-		0.225	0.000	0.225	-
Experimental Forward Operating Base (E2O)	WR	SSC PAC : San Diego, CA	0.912	0.900	Oct 2016	0.750	Nov 2017	0.350	Nov 2018	-		0.350	0.000	2.912	-
Experimental Forward Operating Base (E2O)	WR	Various : Various	0.146	0.514	Dec 2016	0.754	Nov 2017	0.802	Nov 2018	-		0.802	0.000	2.216	-
Experimental Forward Operating Base (E2O)	WR	NSWC : Carderock	0.198	0.180	Nov 2016	0.250	Nov 2017	0.150	Nov 2018	-		0.150	0.000	0.778	-
Experimental Forward Operating Base (E2O)	WR	NAVFAC EXWC : Port Hueneme, CA	0.280	0.140	Nov 2016	0.120	Nov 2017	0.650	Nov 2018	-		0.650	0.000	1.190	-
Experimental Forward Operating Base (E2O)	WR	NSWC : Panama City, FL	0.200	0.000		0.000		0.075	Nov 2018	-		0.075	0.000	0.275	-
Experimental Forward Operating Base (E2O)	WR	NSWC : Crane, IN	0.054	0.397	Oct 2016	0.300	Nov 2017	0.150	Nov 2018	-		0.150	0.000	0.901	-
Experimental Forward Operating Base (E2O)	C/FFP	TBD : TBD	0.000	0.025	Mar 2017	0.025	Nov 2017	0.025	Nov 2018	-		0.025	0.000	0.075	-
		Subtotal	26.414	4.640		4.994		4.320		-		4.320	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative	Various	Various : Various	7.611	0.000		0.000		0.000		-		0.000	0.000	7.611	-
		Subtotal	7.611	0.000		0.000		0.000		-		0.000	0.000	7.611	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JINTACCS	Various	PROGRAM : TRAVEL	0.143	0.032	Feb 2017	0.172	Feb 2018	0.050	Feb 2019	-		0.050	Continuing	Continuing	Continuing
		Subtotal	0.143	0.032		0.172		0.050		-		0.050	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	43.343	4.763		8.314		4.370		-		4.370	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2277 / *System Engineering and Integration*

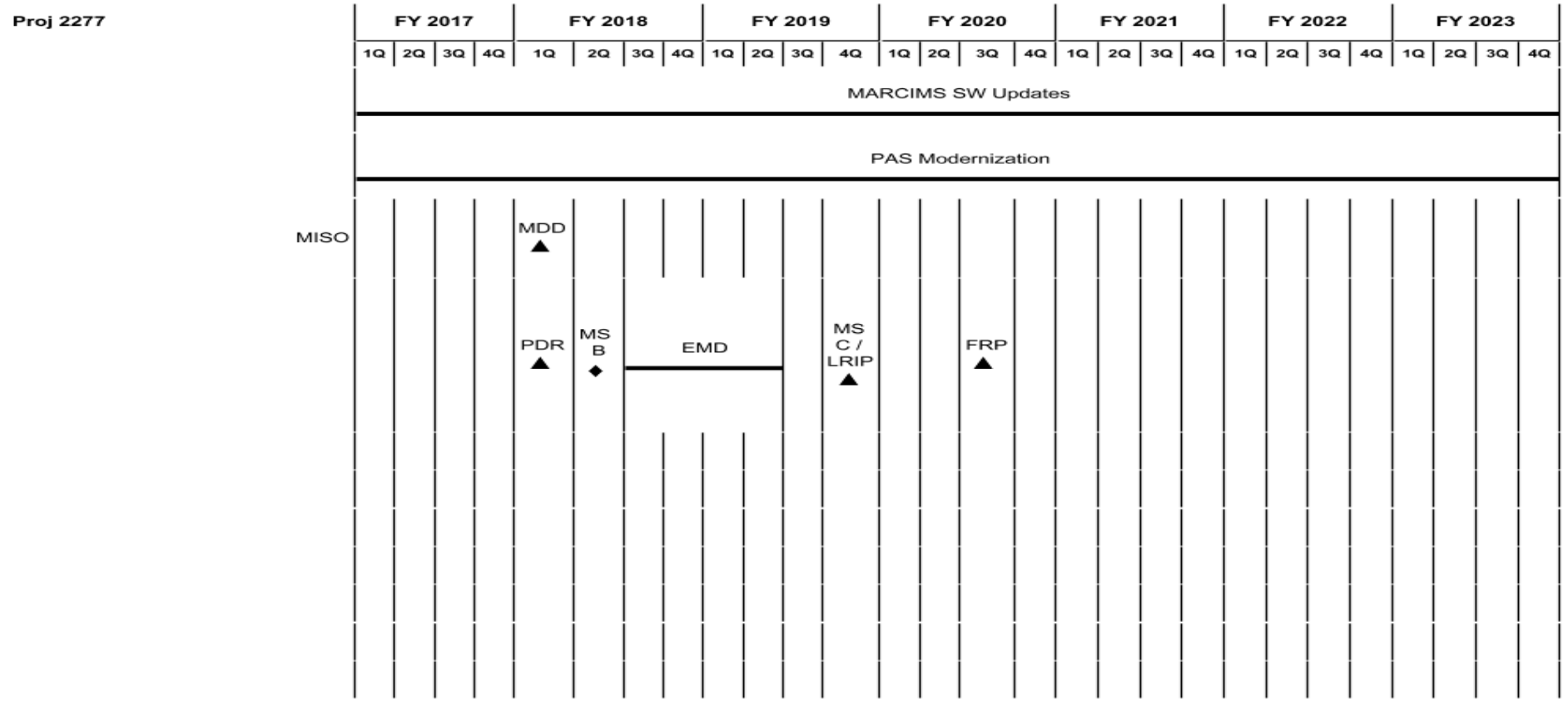

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2277				
MARCIMS SW Updates	1	2017	4	2023
PAS Modernization	1	2017	4	2023
MISO: MDD	1	2018	1	2018
MISO: PDR	1	2018	1	2018
MISO: MS B	2	2018	2	2018
MISO: EMD	3	2018	2	2019
MISO: MS C / LRIP	4	2019	4	2019
MISO: FRP	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2278 / *Air Defense Weapons System*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
2278: *Air Defense Weapons System*	46.369	45.058	24.214	73.605	16.130	89.735	40.743	17.724	13.407	27.369	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Ground Based Air Defense-Stinger Sustainment (GBAD-SS) - Based upon the deployment of the Low Altitude Air Defense (LAAD) Battalions and their employment of the Stinger Missile, GBAD-SS transforms Air Defense equipment through technology insertion and equipment repackaging to address capability gaps as the result of equipment obsolescence and the emergent and evolving threats to the Marine Air Ground Task Force (MAGTF). GBAD-SS consists of five efforts: 1) systems engineering support of currently fielded LAAD equipment/assets to include the Stinger Mounted Optic and Mode 5/S Identification Friend or Foe (IFF); 2) redesign and integration of the Advanced Man-Portable Air Defense System (A-MANPADS) Increment 1 Fire Unit Vehicle (FUV) into an operationally capable vehicle configuration; 3) design, test, and integration of new systems for the Fire Unit Vehicle (FUV) to replace aging and failing technology, to retain interfaces with, and be capable of receiving, a Common Aviation Command and Control System (CAC2S) broadcasted link as well as be capable of interfacing with Marine Air Command and Control System (MACCS) equipment; 4) Redesign and re-integration of Section Leader Vehicle (SLV) equipment from the shelter on a M1165 configuration to M1114 configuration, providing a common platform with greater mobility, force protection and maneuverability increasing overall operational capability; 5) Transition from the HMMWV vehicular platform to the JLTV platform for a Maneuver- Short Range Air Defense (M-SHORAD) Capability in order to field a more survivable On-the-Move (OTM) command and control (C2) and kinetic/non-kinetic capability to keep pace with supported operational forces.

GBAD Future Weapons System (GBAD-FWS): The GBAD Program is rapidly approaching the out of production phase for the A-MANPADS Increment I and the end of life for the Stinger missile. The Stinger missile is reliable but older technology, while it remains relevant in the near-term, the GBAD Program is planning for a GBAD Future Weapon System to address a larger array of targets utilizing organic C2 and sensor systems. Leveraging an update to the Analysis of Alternatives (AoA) completed Sept 2016, the GBAD Future Weapon System's Capability Development Document (CDD) is anticipated in the 4th quarter FY18. The GBAD Future Weapon System will consist of multiple weapons system platforms to defeat current and emerging threats for UAS, Fixed Wing/Rotary Wing (FW/RW) aircraft, and cruise missiles. This development effort will consist of a kinetic and non-kinetic capability to defeat the full spectrum of Low-Altitude Low Observable/Low Radar Cross Section threats. Additionally, this budget reflects the Commandant of the Marine Corps (CMC) directed Counter-UAS (C-UAS) assessment, engineering and acquisition efforts to determine and pursue technology solutions required to defeat the full spectrum of threats associated with the Marine Corps Low-Altitude Air Defense mission with a focus on C-UAS. Efforts will include assessment, engineering analysis and prototype procurement necessary to evaluate various direct energy, electronic attack, projectile, and missile capabilities to determine the right mix of technologies required to negate aerial threats and provide the MAGTF, as well as, Bases, Posts and Stations, force protection against these threats. With the proliferation of both military and commercial UAS platforms, the program will pursue and acquire a GBAD-FWS platform with a C-UAS capability.

Overall, the Air Defense Weapons System $65.521M increase from FY18 to FY19, in combined baseline and OCO funding, reflects the Marine Corps continued urgent need to address emergency war fighting requirements for a Ground Based Air Defense (GBAD) Future Weapons System (FWS) and the Commandant of the Marine

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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Corp (CMC) directed Counter-UAS (C-UAS) assessment, engineering and acquisition efforts to determine and pursue technology solutions required to defeat the full spectrum of threats associated with the Marine Corps Low-Altitude Air Defense mission.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: GBAD STINGER SUSTAINMENT: Product Development	1.016	1.420	1.905	0.000	1.905
Articles:	-	-	-	-	-
FY 2018 Plans: -Complete Stinger Missile Mounted Optic (AN/PAS-18) replacement development. -Complete Mode 5 replacement development. ***FY 2019 Base Plans:*** -Initiate systems design and engineering efforts associated with equipment integration onto a JLTV platform to provide a M-SHORAD capability. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: GBAD STINGER SUSTAINMENT: Support Costs	0.364	0.462	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: -Completes A-MANPADS Engineering Change Proposal (ECP) Readiness Analysis. ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** A-MANPADS Engineering Change Proposal (ECP) Readiness Analysis complete.					
Title: GBAD STINGER SUSTAINMENT: Test and Evaluation	0.175	0.737	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: -Complete Stinger Missile Mounted Optic (AN/PAS-18) Field User Evaluation (FUE).					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Complete Mode 5 replacement Field User Evaluation (FUE). -Complete Section Leader Vehicle redesign transportability testing. ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Completed Stinger Missile Mounted Optic (AN/PAS-18) Field User Evaluation (FUE). Completed Mode 5 replacement Field User Evaluation (FUE). Completed Section Leader Vehicle redesign transportability testing.					
Title: GBAD STINGER SUSTAINMENT: Program Management Support	0.240	0.664	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: -Complete development of acquisition documentation in support of Stinger Identification Friend or Foe (IFF) replacement system. ***FY 2019 Base Plans:*** - ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Completed development of acquisition documentation in support of Stinger Identification Friend or Foe (IFF) replacement system.					
Title: GBAD FWS/COUNTER UAS Product Development	37.227	18.069	61.963	12.390	74.353
Articles:	-	-	-	-	-
Description: Overall, the $56.284M increase from FY18 to FY19, in combined baseline and OCO funding, reflects the Marine Corps continued urgent need to address emergent war fighting requirements for a GBAD Future Weapons System and the Commandant of the Marine Corp (CMC) directed Counter-UAS (C-UAS) assessment, engineering and acquisition efforts to determine and pursue technology solutions required to defeat the full spectrum of threats associated with the Marine Corps Low-Altitude Air Defense mission. Efforts					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
include assessment, engineering analysis and prototype procurement necessary to evaluate various direct energy, electronic attack, missile and projectile capabilities to determine the right mix of technologies required to negate aerial threats and provide the MAGTF, as well as, Bases, Posts and Stations, Force Protection against such threats. With the proliferation of both military and commercial UAS platforms, the program will pursue and acquire GBAD-FWS platforms with a C-UAS capability. ***FY 2018 Plans:*** -Continuation of GBAD Future Weapons System/Counter-UAS engineering and prototype development efforts to determine the technology solutions required to defeat the full spectrum of threats to include UAS's associated with the Marine Corps Low-Altitude Air Defense mission. Includes the procurement and integration of prototype systems and operational assessments. Systems provide capabilities such as detect, track, identify, threat negation and lethal destruction, to include utilizing a slew-to-cue optic for a high energy laser engagement. ***FY 2019 Base Plans:*** -Continuation of GBAD Future Weapons System engineering and prototype development efforts to determine the technology solutions required to defeat the full spectrum of threats to include UAS's associated with the Marine Corps Low-Altitude Air Defense mission, specifically the Group 1 and 2 threats. Systems will provide capabilities such as detect, track, identify, threat negation and lethal destruction, to include utilizing a slew-to-cue optic system for a high energy laser engagement. Funding will purchase Coyote multi-mission C-UAS drone launchers, C-UAS Component Integration Kits for the Mine Resistant Ambush Protected-All Terrain Vehicle (M-ATV) and a C-UAS C2 Network. -Initiates C2 and Sensor engineering development to integrate a medium range Interceptor missile system with the existing "Kill Chain" C2 architecture. This capability will be designed to be effective against rockets, Group 3+ Unmanned Aerial Systems, mortars, lower end cruise missiles, precision guided missiles and rotary wing/fixed wing aircraft. ***FY 2019 OCO Plans:*** -$12.390M provides for the rapid prototyping of equipment by pursuing advanced technology solutions in order to support critical emergent CENTCOM warfighting requirements identified in JUONS #CC-0558. Funding will purchase Coyote multi-mission C-UAS drone launchers, C-UAS Component Integration Kits for the Joint Lightweight Tactical Vehicle (JLTV) and a C-UAS C2 Network. ***FY 2018 to FY 2019 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
The $43.894M increase from FY18 to FY19 in baseline funding reflects the Marine Corps continued urgent need to address emergent war fighting requirements for a GBAD Future Weapons System and the Commandant of the Marine Corp (CMC) directed Counter-UAS (C-UAS) assessment, engineering and acquisition efforts to determine and pursue technology solutions required to defeat the full spectrum of threats associated with the Marine Corps Low-Altitude Air Defense mission. Efforts include assessment, engineering analysis and prototype procurement necessary to evaluate various direct energy, electronic attack, missile and projectile capabilities to determine the right mix of technologies required to negate aerial threats and provide the MAGTF, as well as, Bases, Posts and Stations, Force Protection against such threats. With the proliferation of both military and commercial UAS platforms, the program will pursue and acquire GBAD-FWS platforms with a C-UAS capability.					
Title: GBAD FWS/COUNTER UAS: Support Costs	3.880	1.660	2.872	3.740	6.612
Articles:	-	-	-	-	-
Description: The Government Technical Support Team provides inherently governmental support functions adding depth, breath and expertise not resident in the GBAD Program Office. Functions include technical planning, execution and analysis across multi-disciplinary competencies to include; Systems Architecture, Radar/Jamming Software Engineering, Radar/Jamming Systems Engineering, Cyber Security/Information Assurance, Human Systems Integration, Safety, Configuration Management and the coordination necessary to enable a System of Systems interface with other programs in the "Cue to Slew" kill chain to ensure platform/ software compatibility. Technical Team support is vital in providing both studies and analysis during the Systems Development and Demonstration phase.					
FY 2018 Plans: -Continuation of GBAD Future Weapons System and Counter UAS acquisition, engineering, and assessment efforts to determine the technology solutions required to defeat UAS threats associated with the Marine Corps Low-Altitude Air Defense mission. Includes systems engineering, safety review boards, prototype system maintenance, support and training.					
FY 2019 Base Plans: -Continuation of GBAD Future Weapons System and Counter UAS acquisition, engineering, and assessment efforts to determine the technology solutions required to defeat UAS threats associated with the Marine Corps Low-Altitude Air Defense mission. Efforts focus on C-UAS prototype software load set analysis with updates to					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
address the ever evolving enemy threat and engineering efforts with lessons learned from the procurement of initial CUAS prototypes. ***FY 2019 OCO Plans:*** -$3.740M provides for the rapid prototyping of Counter UAS equipment by pursuing advanced technology solutions to support critical emergent CENTCOM warfighting requirements identified in JUONS #CC-0558. Funding supports the engineering, integration and installation of multiple C-UAS components on the Joint Lightweight Tactical Vehicle (JLTV) to include a C-UAS C2 Network System in response to the MARCENT UUNS. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Baseline funding increases $1.212M from FY18 to FY19 provides specialized Government Activity technical support not resident in the Program Office for GBAD Future Weapons System efforts focusing on C-UAS prototype software load set analysis with updates to address the ever evolving enemy threat and engineering efforts with lessons learned from the procurement of initial CUAS prototypes.					
Title: GBAD FWS/COUNTER UAS: Test and Evaluation	0.000	0.000	5.471	0.000	5.471
Articles:	-	-	-	-	-
FY 2018 Plans: N/A ***FY 2019 Base Plans:*** Initiates GBAD Future Weapons System Test and Evaluation of C-UAS Systems Soft-Kill and Hard-Kill prototypes integrated on both M-ATV's and JLTV's. Testing locations include Yuma Proving Grounds AZ, Crane IN and Quantico VA. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** An increase of $5.471M supports Test and Evaluation of C-UAS Systems Soft-Kill and Hard-Kill prototypes integrated on both M-ATV's and JLTV's.					
Title: GBAD FWS/COUNTER UAS: Program Management Support	2.156	1.202	1.394	0.000	1.394
Articles:	-	-	-	-	-
FY 2018 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Continuation of GBAD Future Weapons System and Counter UAS acquisition documentation to include continued Analysis of Alternative (AoA) studies, completion of the GBAD-FWS Acquisition Strategy and Acquisition Plan, and the completion of the GBAD FWS CDD necessary to support new technology solutions required to defeat the full spectrum or threats associated with the Marine Corps Low-Altitude Air Defense mission. ***FY 2019 Base Plans:*** - Continues GBAD Future Weapons System acquisition documentation to include the initiation of the Independent Logistics Assessment (ILA) Report, the Fielding Plan, the Life Cycle Sustainment Plan, Technical Manuals and the Programmatic Environmental Safety and Occupational Health Evaluation (PESHE) which are all required documentation to support new technology solutions required to defeat the full spectrum or threats associated with the Marine Corps Low-Altitude Air Defense mission. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	45.058	24.214	73.605	16.130	89.735

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/3006: *GBAD*	9.170	9.432	18.334	-	18.334	176.521	197.877	226.815	219.396	21.675	963.646

Remarks

D. Acquisition Strategy

GBAD-Stinger Sustainment: A-MANPADS Increment I is an Abbreviated Acquisition Program (AAP), GBAD-SS enables the rapid transition from the Avenger/MANPADS weapon system to the more mobile, flexible and maintainable Advanced MANPADS to a Maneuver-Short Range Air Defense (M-SHORAD) capability with JLTV integration design and engineering efforts beginning in FY19. The AAP is principally comprised of integrating Government Off The Shelf (GOTS) equipment and Non-Developmental Items (NDI).

GBAD Future Weapons System: The GBAD Program is rapidly approaching the out of production phase for the A-MANPADS Increment I and the end of life for the Stinger missile. The Stinger missile is reliable but older technology, while it remains relevant in the near-term, the GBAD Program is planning for a GBAD Future

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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Weapon System to address a larger array of targets utilizing organic C2 and sensor systems. Leveraging an update to the Analysis of Alternatives (AoA) completed Sept 2016, the Marine Air Defense Integrated System (MADIS) Capability Development Document (CDD) is anticipated in the 4th quarter FY18. The GBAD Future Weapons System will consist of a multiple weapons system platforms to defeat current and emerging threats for UAS, FW/RW aircraft, and cruise missiles.

E. Performance Metrics

Integrated Master Schedule
OSD Financial Benchmarks
Technical Performance Measures
Probability of Program Success (PoPS) Assessments

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2278 / *Air Defense Weapons System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-SS	WR	NSWC : Dahlgren, VA	0.697	0.110	Dec 2016	0.356	Oct 2017	0.000		-		0.000	Continuing	Continuing	Continuing
GBAD-SS	WR	NSWC : Crane.IN	4.590	0.411	Dec 2016	0.421	Nov 2017	1.905	Dec 2018	-		1.905	Continuing	Continuing	Continuing
GBAD-SS	Various	VARIOUS : VARIOUS	6.865	0.495	Jul 2017	0.643	Mar 2018	0.000		-		0.000	Continuing	Continuing	Continuing
GBAD FWS/Counter UAS	MIPR	CTTSO : Washington, DC	0.000	14.265	Jun 2017	1.528	Jan 2018	0.000		-		0.000	0.000	15.793	-
GBAD FWS/Counter UAS	MIPR	DOTC : Picatinny, NJ	0.000	14.090	Jun 2017	16.541	Feb 2018	2.992	Mar 2019	-		2.992	0.000	33.623	-
GBAD FWS/Counter UAS	Various	DLA : Ft Belovoir VA	0.000	0.000		0.000		36.236	Mar 2019	-		36.236	0.000	36.236	-
GBAD FWS/Counter UAS	Various	VARIOUS : VARIOUS	0.000	8.872	Jul 2017	0.000		0.003	Dec 2018	-		0.003	0.000	8.875	-
GBAD FWS/Counter UAS	Various	CRAM : Redstone Arsenal, AL	0.000	0.000		0.000		12.911	Dec 2018	-		12.911	0.000	12.911	-
GBAD FWS/Counter UAS	Various	NSWC : Crane.IN	0.000	0.000		0.000		9.821	Dec 2018	-		9.821	0.000	9.821	-
GBAD FWS/Counter UAS	Various	Not Specified : Not Specified	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
GBAD Counter UAS OCO	Various	CRAM : Redstone Arsenal, AL	0.000	0.000		0.000		0.000		8.260	Feb 2019	8.260	0.000	8.260	-
GBAD Counter UAS OCO	Various	NSWC : Crane.IN	0.000	0.000		0.000		0.000		4.130	Dec 2018	4.130	0.000	4.130	-
Prior Years Cumulative Funding	Various	N/A : N/A	15.932	0.000		0.000		0.000		-		0.000	0.000	15.932	-
		Subtotal	28.084	38.243		19.489		63.868		12.390		76.258	Continuing	Continuing	N/A

Remarks

GBAD-SS increases $.485M from FY18 to FY19 to support the system's design and engineering efforts associated with equipment integration onto a JLTV platform to provide a Maneuver-Short Range Air Defense (M-SHORAD) capability.

Overall, GBAD FWS/Counter UAS funding increases $56.284M, from FY18 to FY19 to include both baseline and OCO funding, as the Government continues to procure both "Soft-Kill and "Hard- Kill" C-UAS prototype equipment. Funding will purchase Coyote multi-mission C-UAS drone launchers, a C-UAS C2 Network and C-UAS Component Integration Kits for both the Mine Resistant Ambush Protected-All Terrain Vehicle (M-ATV) and the Joint Lightweight Tactical Vehicle (JLTV).

FY19 GBAD Counter UAS OCO funding provides $12.390M for the rapid prototyping of equipment by pursuing advanced technology solutions in order to support critical emergent CENTCOM warfighting requirements identified in Marine Corps UUNS #15205UA, and JUONS #CC-0558. Funding will procure Coyote multi-mission C-UAS drone launchers, C-UAS Component Integration Kits for the JLTV and a CUAS C2 Network.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-SS	WR	NSWC : Crane, IN	2.644	0.364	Dec 2016	0.366	Jan 2018	0.000		-		0.000	Continuing	Continuing	Continuing
GBAD-SS	Various	VARIOUS : VARIOUS	0.000	0.000		0.096	Dec 2017	0.000		-		0.000	0.000	0.096	-
GBAD FWS/Counter UAS	Various	NSWC : Dahlgren	0.000	3.880	Apr 2017	1.660	Dec 2017	1.703	Dec 2018	-		1.703	0.000	7.243	-
GBAD FWS/Counter UAS	Various	VARIOUS : VARIOUS	0.000	0.000		0.000		1.169	Dec 2018	-		1.169	0.000	1.169	-
GBAD Counter UAS OCO	WR	NSWC : Crane, IN	0.000	0.000		0.000		0.000		3.740	Dec 2018	3.740	0.000	3.740	-
Prior Years Cumulative Funding	Various	N/A : N/A	4.388	0.000		0.000		0.000		-		0.000	0.000	4.388	-
		Subtotal	7.032	4.244		2.122		2.872		3.740		6.612	Continuing	Continuing	N/A

Remarks

GBAD FWS/Counter UAS increases $4.490M from FY18 to FY19, to include both baseline and OCO funding, providing specialized Government Activity technical support not resident in the Program Office for C-UAS prototype software load set analysis to address the ever evolving enemy threat, technical studies for integrating C2 with C-UAS weapon systems and supporting systems design, engineering efforts with lessons learned from the procurement of initial C-UAS prototypes support and the engineering, integration and installation of multiple C-UAS components to include a C-UAS C2 Network on the Joint Lightweight Tactical Vehicle (JLTV) in support of the MARCENT UUNS.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD FWS/Counter UAS	Various	VARIOUS : VARIOUS	0.000	0.000		0.000		5.471	Dec 2018	-		5.471	0.000	5.471	-
GBAD-SS	MIPR	NSWC Crane : Crane, IN	1.104	0.125	Mar 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
GBAD-SS	MIPR	ARMY : VARIOUS	0.000	0.050	Aug 2017	0.737	Nov 2017	0.000		-		0.000	0.000	0.787	-
Prior Years Cumulative Funding	Various	N/A : N/A	4.994	0.000		0.000		0.000		-		0.000	0.000	4.994	-
		Subtotal	6.098	0.175		0.737		5.471		-		5.471	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Funding increases $4.734M from FY18 to FY19 to support the Test and Evaluation of C-UAS Systems Soft-Kill and Hard-Kill prototypes integrated on both M-ATV's and JLTV's. Testing locations include Yuma Proving Grounds AZ, Crane IN and Quantico VA.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-SS	C/FP	MCSC : Quantico, VA	2.965	0.050	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
GBAD-SS	Various	MCSC Travel : Quantico, VA	0.198	0.100	Sep 2017	0.098	Sep 2018	0.000		-		0.000	Continuing	Continuing	Continuing
GBAD-SS	WR	NSWC : Dahlgren, VA	0.674	0.090	Jan 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
GBAD-SS	C/FP	Alexandria Insights : Quantico, VA	0.000	0.000		0.566	Dec 2017	0.000		-		0.000	0.000	0.566	-
GBAD FWS/COUNTER UAS	C/FP	Alexandria Insights : Quantico, VA	0.000	2.156	Dec 2016	1.202	Dec 2017	1.394	Dec 2018	-		1.394	0.000	4.752	-
Prior Years Cumulative Funding	Various	N/A : N/A	1.318	0.000		0.000		0.000		-		0.000	0.000	1.318	-
		Subtotal	5.155	2.396		1.866		1.394		-		1.394	Continuing	Continuing	N/A

Remarks

-Alexandria Insights funding increases ($0.192) from FY18 to FY19 to initiate GBAD FWS logistics documentation efforts to include the Independent Logistics Assessment (ILA) Report, the Fielding Plan, and the Life Cycle Sustainment Plan.

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	46.369	45.058		24.214		73.605		16.130		89.735	Continuing	Continuing	N/A

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	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Overall, the Air Defense Weapons System $65.521M increase from FY18 to FY19, in combined baseline and OCO funding, reflects the Marine Corps continued urgent need to address emergency war fighting requirements for a Ground Based Air Defense (GBAD) Future Weapons System (FWS) and the Commandant of the Marine Corp (CMC) directed Counter-UAS (C-UAS) assessment, engineering and acquisition efforts to determine and pursue technology solutions required to defeat the full spectrum of threats associated with the Marine Corps Low-Altitude Air Defense mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2278 / *Air Defense Weapons System*

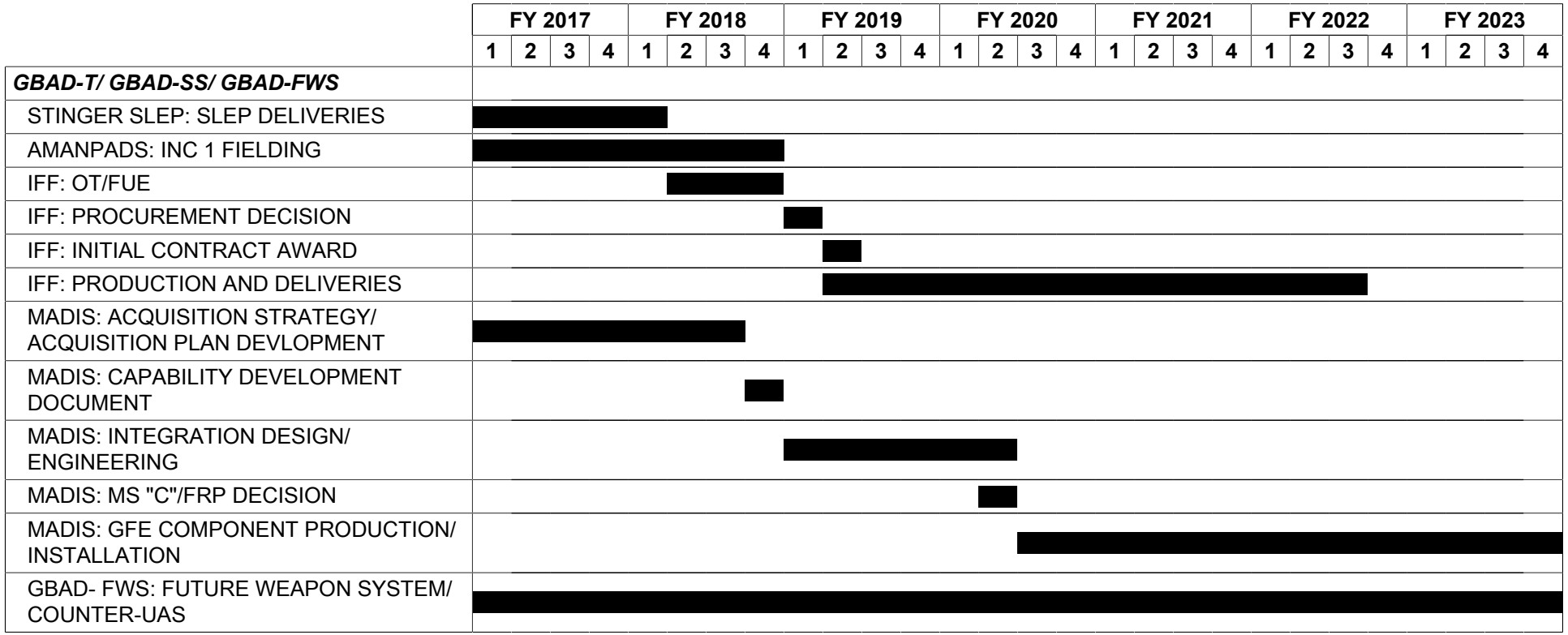

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
GBAD-T/ GBAD-SS/ GBAD-FWS				
STINGER SLEP: SLEP DELIVERIES	1	2017	1	2018
AMANPADS: INC 1 FIELDING	1	2017	4	2018
IFF: OT/FUE	2	2018	4	2018
IFF: PROCUREMENT DECISION	1	2019	1	2019
IFF: INITIAL CONTRACT AWARD	2	2019	2	2019
IFF: PRODUCTION AND DELIVERIES	2	2019	3	2022
MADIS: ACQUISITION STRATEGY/ACQUISITION PLAN DEVLOPMENT	1	2017	3	2018
MADIS: CAPABILITY DEVELOPMENT DOCUMENT	4	2018	4	2018
MADIS: INTEGRATION DESIGN/ ENGINEERING	1	2019	2	2020
MADIS: MS "C"/FRP DECISION	2	2020	2	2020
MADIS: GFE COMPONENT PRODUCTION/ INSTALLATION	3	2020	4	2023
GBAD- FWS: FUTURE WEAPON SYSTEM/ COUNTER-UAS	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy											Date: February 2018	
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COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
2510: *MAGTF CSSE & SE*	294.532	5.501	1.518	1.307	-	1.307	2.310	1.468	1.486	1.520	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

(U) The Marine Air Ground Task Force (MAGTF) Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contributes to the Combatant Commander's Common Operating Picture to support rapid accurate decision making.

JOINT FORCE REQUIREMENTS GENERATOR II (JFRG II)) is an Automated Information System (AIS) that provides the Marine Corps' the capability to plan and execute strategic force deployments in support of Joint contingency and crisis action operations and plans. It serves as the single link between Service operational force requirements and validated/sourced unit personnel and cargo data. JFRG II permits multi-level planning with entry of equipment and personnel data, transportation/ movement data, and the phasing of the total force throughout the entire movement timeline. JFRG II interfaces with the Joint Operation Planning and Execution System (JOPES) to register update and validate Time Phased Force and Deployment Data (TPFDD) within the Department of Defense chain of command. Validated deployment information is then used by U.S. Transportation Command for the scheduling of strategic transportation assets. JFRG II interfaces with the MAGTF Deployment Support System II (MDSS II) for unit cargo information and the War Reserve System (WRS) in order to register sustainment requirements. JFRG II can generate standard, executive, and ad hoc reports and perform database queries to support information requirements. JFRG II operates and functions in a classified environment.

BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) provides all Marine Corps installations with the base area network
communications infrastructure that connects the end-user to the DISA network. BTI modernizes, sustains, upgrades and enhances the telecommunications systems infrastructure for all Marine Corps Installations in order to meet the demands required to support the 5th Element of the Marine Air Ground Task Force (MAGTF).
BTI is designed to maintain current industry standards as they relate to technological capabilities for all voice, video and data services and are transported via each installation's infrastructure. These data services include, support for but are not limited to: Enhanced 911 (E911), Video-Teleconferencing, Integrated Services Digital Network, Marine Corps Enterprise Network, Energy Monitoring Control Systems, Intrusion Detection Systems, Access Control Systems, Fire Alarm Control Networks and Fleet Training Systems. This includes supporting systems such as optical networks, telecommunications management systems, primary power, voice mail, teleconferencing, and outside plant infrastructure. The ongoing focus is technology refresh and standardization on DISA Unified Capabilities (UC) (voice, video, collaboration, and data)
through modernization of installation infrastructure in order to maintain connection to the DISA network.

ENTERPRISE LOGISTICS SUPPORT SYSTEMS (ELS2): Provides funding that supports the USMC Deployment and Execution Support Systems and the Distribution Management Support Systems, and fair share cost to the joint program management office systems. These systems and applications support the planning, deployment, distribution, sustainment and redeployment of supplies, equipment and personnel. The ELS2 applications utilize Automated Information Technology (AIT) read/write devices, active radio frequency identification (aRFID) tags and satellite tracking systems. ELS2 applications support In-Transit Visibility (ITV) and Total Asset Visibility

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(TAV) initiatives to provide commanders with timely and accurate near real-time data on the location and movement of personnel, equipment and supplies that are in-process, in-transit and in-theater. This developmental effort completed in FY17 and requires no FY18 funding.

MAGTF LOGISTICS SUPPORT SYSTEMS (MLS2): Composed of several main components including the Electronic Maintenance Support System (EMSS). EMSS is a rugged organizational-level (O-level), light-weight, one-man portable maintenance device capable of supporting multiple platforms and systems across maintenance communities. It provides a Commercial Off-The-Shelf (COTS) hardware device equipped with Built-In-Test/Built-In-Test Equipment (BIT/BITE) interfaces, and Software Defined Test Instrument (SDTI) General Purpose Electronic Test Equipment (GPETE) capabilities. These hardware capabilities will enable commercial or custom DoD and USMC software capabilities including Interactive Electronic Technical Manuals (IETMs), Computer Based Training (CBT), and other maintenance applications to be hosted on EMSS. EMSS also has the capability to connect to the Marine Corps Enterprise Network (MCEN) and access sites like Global Combat Support System - Marine Corps (GCSS-MC) in order to facilitate maintenance and supply transactions, thereby improving readiness. With these capabilities, maintainers will make more informed decisions and sustain force readiness over time.

GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS, (GCSS-MC)/Logistics Chain Management (LCM) is the implementation of the enterprise Information Technology (IT) architecture designed to support both improved and enhanced Marine Air Ground Task Force (MAGTF) Combat Support Services (CSS) functions and MAGTF Commander and Combatant Commanders/Joint Task Force (CC/JTF) combat support information requirements. The primary goal of GCSS-MC/LCM is to provide the capabilities specified in the Logistics Operational Architecture (Log OA). The result of enabling the Log OA is the retirement of logistics applications. GCSS-MC/LCM exposes timely mission information to Marine Corps operational and CSS commanders, CC/JTF commanders and their staffs and other authorized users. It exposes information interoperability and common logistics information applications and services across functional areas. GCSS-MC/LCM is an enabler that allows operating forces commanders to base decisions on complete logistics information and make decisions in concert with specific operational tasks. Other follow-on functionalities can be invoked if affordable and when defined by the problem statements.
Funding in GCSS-MC/LCM RDT&E PE 0206313M/Project 2510 transitioned to PE 0219902M/Project 5503 commencing in FY17.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: JOINT FORCES REQUIREMENT GENERATION II (JFRG II)	0.193	0.206	0.197	0.000	0.197
Articles:	-	-	-	-	-
FY 2018 Plans: -Complete preparation of MCEITS Hosting environment.					
FY 2019 Base Plans: -Continue Engineering Change Proposals (ECPs).					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
No significant change from FY 2018 to FY 2019.					
Title: BASE TELECOM (BTI) ***Articles:*** ***FY 2018 Plans:*** Continue test and evaluation (T&E) engineering support for Defense Information Systems Agency (DISA) Unified Capabilities (UC) (voice, video, collaboration, and data) implementation. ***FY 2019 Base Plans:*** Continue test and evaluation (T&E) engineering support for Defense Information Systems Agency (DISA) Unified Capabilities (UC) (voice, video, collaboration, and data) implementation. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.	0.475 -	0.500 -	0.458 -	0.000 -	0.458 -
Title: Global Combat Support System - Marine Corps ***Articles:*** ***FY 2018 Plans:*** N/A ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.	3.248 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: ENTERPRISE LOGISTICS SUPPORT SYSTEMS (ELS2) ***Articles:*** ***FY 2018 Plans:*** N/A ***FY 2019 Base Plans:***	1.045 -	0.000 -	0.000 -	0.000 -	0.000 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: MAGTF LOGISTICS SUPPORT SYSTEMS (MLS2) ***Articles:*** ***FY 2018 Plans:*** -Continue efforts to investigate software defined test instruments (SDTI) and software applications for the Health Management System (formerly called Next Generation Operation Management Systems). Effort will be completed in FY18. -Continue to investigate advanced Interactive Electronic Technical Manual software to incorporate advanced diagnostics. Effort will be completed in FY18. -Continue information security and interoperability testing/certification. Effort will be completed in FY18. -Continue software applications which support enhanced maintenance capabilities on existing weapon system platforms. Effort will be completed in FY18. -Continue efforts to evaluate downsized testers for tablet applications. Effort will be completed in FY18. -Continue efforts to investigate instrument modules for on system testing. Effort will be completed in FY18. -Initiate efforts to develop Wireless Access Module (WAM) of host application to maintenance platform tools for the following MOSs: AAV mechanics, Tank mechanics, Motor-T mechanics, LAV mechanics, and Heavy Equipment mechanics. ***FY 2019 Base Plans:*** - Continue to develop WAM prototypes in order to enable organic level maintenance on LAV, Tank, AAV, and Heavy Equipment weapon systems. - Initiate efforts to develop software applications for the Health Management System (HMS) in order to push and pull data, conduct software configuration management, and generate maintenance reports.	0.540 -	0.812 -	0.652 -	0.000 -	0.652 -

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Initiate efforts to develop government off the shelf (GOTS) diagnostic software capabilities for Heavy Equipment and Motor Transport weapon systems in order to decrease their life cycle costs. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	5.501	1.518	1.307	0.000	1.307

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/BLI 463500 BTI: *BTI*	16.930	32.893	54.349	-	54.349	23.196	54.429	57.995	67.721	Continuing	Continuing
• PMC/BLI 418100: *MAGTF Logistics Support Systems*	3.364	11.263	10.453	-	10.453	10.616	12.418	12.536	12.590	Continuing	Continuing
• PMC/BLI 462000: *TSP/Enterprise Logistics Support Systems*	0.594	0.253	0.259	-	0.259	0.264	0.269	0.275	0.281	Continuing	Continuing

Remarks

D. Acquisition Strategy

JOINT FORCES REQUIREMENT GENERATOR II (JFRG II) is required to modernize in order to implement Joint Requirements Oversight Counsel (JROC) mandates in support of Adaptive Planning and Execution (APEX) including the inclusion of Global Force Management - Data Initiative (GFM-DI) data elements and Joint Command and Control (JC2) Capabilities Development Document (CDD) requirements. The JFRG II legacy software application will remain supported until end of life (EOL) in FY18 when it will be replaced by the modernized version. Future capability improvements as identified in the JC2 CDD will be implemented through the configuration management process.

BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) provides all Marine Corps installations with the base area network communications infrastructure that connects the end-user to the DISA network. BTI modernizes, sustains, upgrades and enhances the telecommunications systems infrastructure for all Marine Corps Installations in order to meet the demands required to support the 5th Element of the Marine Air Ground Task Force (MAGTF). Participation in the DISA Unified Capabilities Master Plan (voice, video, collaboration, and data) is critical to BTI modernization strategy. The RDT&E funds will be utilized for analysis, research and evaluation of Unified Capabilities (UC) (voice, video, collaboration, and data) implementation efforts.

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ENTERPRISE LOGISTICS SUPPORT SYSTEM (ELS2): The acquisition strategy is to develop the functional elements of the MAGTF Deployment Support System II (MDSS II) into a Sea Service Deployment Module (SSDM) of the Integrated Computerized Deployment System (ICODES). ICODES is a Joint Program currently managed by the Surface Deployment and Distribution Command (SDDC) of USTRANSCOM. The development of the SSDM was instituted as a CLIN to the SDDC JPMO contract for ICODES awarded in December 2015. The development will follow an evolutionary acquisition approach that allows for continued development based on functional transition and changing user need requirements as well as information assurance requirements. The JPMO will determine the contracting strategy and this PMO will acknowledge and approve strategies prior to funding development.

MAGTF LOGISTICS SUPPORT SYSTEMS (MLS2) is pursuing an evolutionary acquisition strategy in order to sustain operationally suitable and supportable capability across the Marine Corps as a maintenance aid. Electronic Maintenance Support Systems must evolve in concert with the supported platforms maintenance philosophy to provide extended functionality and access to network connectivity.

Global Combat Support System- Marine Corps (GCSS-MC): The acquisition strategy is to 'embrace and replace' existing logistics information systems. Using the capabilities provided by GCSS-MC/LCM Increment 1, PMW 230 (PM for GCSS-MC) will embrace existing logistics information systems or replace them as appropriate with modern enabling technology that meets the requirements of the Business Case Analysis(s) (BCAs).

E. Performance Metrics

N/A

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JFRG II	C/IDIQ	SAIC : Stafford, VA	2.293	0.000		0.206	Jan 2018	0.197	Jan 2019	-		0.197	Continuing	Continuing	Continuing
ELS2 -ICODES Development	C/CPFF	USTRANSCOM JPMO : SCOTT AFB, IL	4.250	1.045	Jan 2018	0.000		0.000		-		0.000	0.000	5.295	-
EMSS/MAGTF Logistics Support Systems	WR	NSWC, Crane : Crane, IN	0.000	0.540	Jan 2017	0.203	Feb 2018	0.652	Feb 2019	-		0.652	0.000	1.395	-
Prior Years Cumulative Funding	Various	Various : Various	277.958	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	284.501	1.585		0.409		0.849		-		0.849	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMSS/MAGTF Logistics Support Systems Program SW Support	C/FFP	Various : Various	0.846	0.000		0.609	Jan 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	4.120	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
GCSS-CM R-12 Implementation Support	SS/FFP	Leidos : Various	0.000	3.248	Nov 2016	0.000		0.000		-		0.000	0.000	3.248	-
		Subtotal	4.966	3.248		0.609		0.000		-		0.000	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JFRG	C/IDIQ	SAIC : Stafford, VA	0.190	0.193	Jan 2018	0.000		0.000		-		0.000	0.000	0.383	-
BTI	MIPR	MITRE : Aberdeen Proving Ground, MD	1.115	0.475	Jan 2017	0.500	Jan 2018	0.458	Jan 2019	-		0.458	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	3.760	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	5.065	0.668		0.500		0.458		-		0.458	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	294.532	5.501		1.518		1.307		-		1.307	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

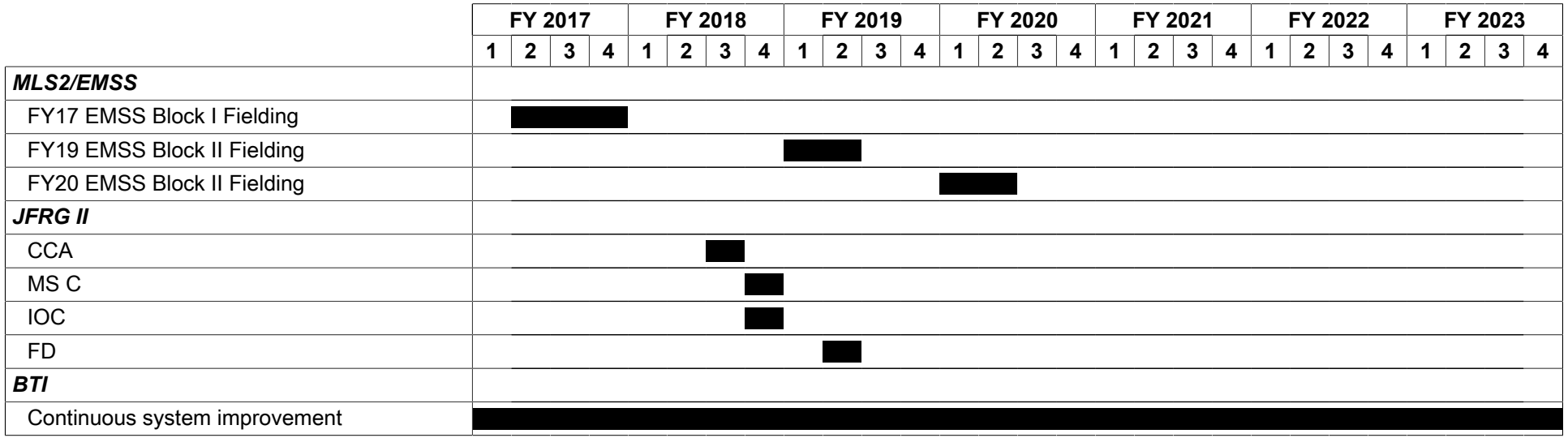

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MLS2/EMSS				
FY17 EMSS Block I Fielding	2	2017	4	2017
FY19 EMSS Block II Fielding	1	2019	2	2019
FY20 EMSS Block II Fielding	1	2020	2	2020
JFRG II				
CCA	3	2018	3	2018
MS C	4	2018	4	2018
IOC	4	2018	4	2018
FD	2	2019	2	2019
BTI				
Continuous system improvement	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
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COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3099: *Radar System*	180.131	11.729	14.015	16.435	-	16.435	20.977	18.756	18.623	13.921	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems to project 3773 Fire Coordination and Sensors. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.

NOTE: The FY 2019 funding request was reduced by $9.553M to account for the availability of prior year execution balances.

Increase of $2.620M from FY18 to FY19 supports enhanced software development for AN/TPS-59 Tactical Ballistic Missile (TBM) detection as well as enhanced data analysis and engineering modeling of threat profiles to support the TBM software enhancements.

A. Mission Description and Budget Item Justification

Long Range Radar (AN/TPS-59) - The AN/TPS-59A(V)3 is a transportable, three dimensional, tactical radar system that provides the Marine Air Ground Task Force (MAGTF) with long-range surveillance. It is the MAGTF's only ground based long range sensor that provides the capability to detect and report Air Breathing Targets (ABT) and track Theater Ballistic Missiles (TBM). The AN/TPS-59A(V)3 Radar System is connected to the Common Aviation Command and Control Systems (CAC2S). It provides the air defense controllers data and may be used autonomously to conduct Ground Control Intercept, tactical en-route Air Traffic Control (ATC), or TBM alert operations via the Joint Integrated Air Missile Defense (IAMD) encrypted Link-16. The USMC extended the AN/TPS-59 service life through 2035; therefore, in order to maintain its operational relevance on the battlefield, a number of modernization efforts are initiated starting in FY17. The Digital Receiver and Exciter (DREX) upgrade will convert the analog receivers and exciters to digital to address Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues, enable spectral agility, reduce noise, reduce false alarms, and enhance Electronic Counter-Countermeasures (ECCM) capability. This effort will include an essential simulation and test environment capability.

Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify, and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder Radar, the AN/TPQ-49 Lightweight Counter Mortar Radar, and the AN/TSQ-267 Target Processing Set. The FTAS is critical in the execution of counterfire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. The program will continue to address system issues that arise due to DMSMS items within the FTAS. The USMC assumed the role of Primary Inventory Control Activity (PICA) for the AN/TPQ-49 in FY15 when the Army divested itself from the system. FTAS transitions from Project C3099 to C3773 beginning in FY19.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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Short/Medium Range Air Defense Radar (AN/TPS-63 or SHORAD) - The AN/TPS-63 is a two-dimensional, medium-range, medium altitude, transportable radar system, which is doctrinally employed as a tactical gap-filler or as an early warning system for early deployment into the operational area. It has a 360-degree air surveillance capability at a range of 160 miles and complements the co-employed AN/TPS-59 three-dimensional, long-range, air surveillance radar system. The program will use Other Government Agencies (OGAs) to develop engineering change proposals related to DMSMS for improved system reliability with the specific purpose of meeting increased fleet operational requirements. This system will be replaced by Ground/Air Task Oriented Radar (G/ATOR AN/TPS-80).

Virtual Warfare Center (VWC) Support - The project team conducts fully interactive simulated war games at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the Integrated Air and Missile Defense (IAMD) mission area. The VWC provides a venue for the exploration of advanced engagement concepts focused on persistent forward naval engagements in support of the MAGTF and the development of associated Joint and Service specific tactics, techniques, and procedures (TTPs). VWC support encompasses a set of integrated fire control (IFC) activities that also includes concept/CONOPS development, family of systems architecture development, and systems engineering/integration efforts.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: AN/TPS-59: Product Development	6.383	6.628	7.736	0.000	7.736
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue product development for Digital Receiver and Exciter (DREX) which is critical to address congested spectral environment and enable all future enhancements to include Tactical Ballistic Missile (TBM). -Initiate Digital Receiver and Exciter (DREX) Engineering Design Model (EDM).					
FY 2019 Base Plans: -Continue enhanced software development for Tactical Ballistic Missile (TBM) detection. -Continue DREX Engineering Design Model (EDM) Development.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: Increase of $1.108M from FY18 to FY19 supports enhanced software development for Tactical Ballistic Missile (TBM) detection.					
Title: AN/TPS-59: Support	1.259	3.823	4.275	0.000	4.275
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue Developmental Engineering Support for Mode 5 Level 1 (M5L1) Software Enhancement.					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Continue developmental engineering support for Digital Receiver and Exciter (DREX) and initiate developmental engineering support for Array Erection. -Initiate Identification Friend or Foe (IFF) testing support. ***FY 2019 Base Plans:*** -Initiate test and evaluation support for Digital Receiver and Exciter (DREX). -Continue developmental engineering support for DREX. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $.452M from FY18 to FY19 will fund Government Furnished Equipment for the Test Array located at the Original Equipment Manufacturer (OEM).					
Title: AN/TPS-59: Test and Evaluation	0.000	0.340	1.396	0.000	1.396
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue Blackdart and Boldquest Testing Support, Mode 5 Level 1 (M5L1) Testing, and System of System Modernization Testing. -Continue Moving Target Generator testing which will drastically reduce future test costs for Tactical Ballistic Missile (TBM) testing and System of System Capability testing. -Initiate Identify Friend or Foe (IFF) Testing. ***FY 2019 Base Plans:*** -Initiate test and evaluation of the Digital Receiver and Exciter (DREX) Engineering Design Module (EDM). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $1.056M from FY18 to FY19 will support Test and Evaluation of the Digital Receiver and Exciter (DREX) Engineering Design Module (EDM).					
Title: AN/TPS-59: Management Services	0.000	0.000	1.900	0.000	1.900
Articles:	-	-	-	-	-
FY 2018 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2019 Base Plans:*** -Initiate support from MITRE for enhanced data analysis and engineering modeling of threat profiles to support the tactical ballistic missile software enhancements and current operational threats. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $1.900M from FY18 to FY19 will support enhanced data analysis and engineering modeling of threat profiles to support the tactical ballistic missile software enhancements and current operational threats.					
Title: FTAS: Product Development	0.448	1.246	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: -Initiate development of Lightweight Counter Mortar Radar (LCMR) tech refresh system. -Initiate development of the Target Processing System (TPS) Kits for use within the Mobile Tactical Shelter (MTS). ***FY 2019 Base Plans:*** -See Project C3773. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $1.246M is due to realignment from Project C3099 to C3773. Realignment of effort to new Project in FY 19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.					
Title: FTAS: Support	0.369	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: N/A ***FY 2019 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No change from FY 2018 to FY 2019.					
Title: FTAS: Test and Evalution ***Articles:*** ***FY 2018 Plans:*** -Continue interoperability testing for the Family of Target Acquisition Systems (FTAS) integration within the Marine Air-Ground Task Force (MAGTF). ***FY 2019 Base Plans:*** -See Project C3773. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems to project 3773 Fire Coordination and Sensors.	0.680 -	0.391 -	0.000 -	0.000 -	0.000 -
Title: AN/TPS-63 (SHORAD): Support ***Articles:*** ***FY 2018 Plans:*** -Complete ECP Development Support at OGAs. ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Completed ECP Development Support at OGAs.	0.000 -	0.198 -	0.000 -	0.000 -	0.000 -
Title: VWC: Test and Evaluation	0.000	0.444	0.315	0.000	0.315

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue to simulate war games at the VWC in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the IAMD mission area. ***FY 2019 Base Plans:*** -Continue to simulate war games at the VWC in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the IAMD mission area. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Title: VWC: Support	2.590	0.945	0.813	0.000	0.813
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue to simulate war games at the VWC in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the IAMD mission area. ***FY 2019 Base Plans:*** -Continue to simulate war games at the VWC in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the IAMD mission area. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	11.729	14.015	16.435	0.000	16.435

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/465003: *AN/TPS-59*	14.076	8.956	6.694	-	6.694	10.460	12.265	16.140	16.473	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/465005: *FTAS*	2.984	2.735	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	31.876
• PMC/465007: *SHORAD (AN/TPS-63)*	0.267	0.720	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.167
• PMC/463000: *AN/TPS-59 MCHS*	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.314
• RDTE/CC284: *AN/TPS-59 Radar Enhancements*	11.606	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.158
• RDTE/C3773: *FTAS*	0.000	0.000	1.626	-	1.626	1.629	1.660	1.687	1.721	0.000	8.323
• PMC/473300: *FTAS*	0.000	0.000	2.867	-	2.867	2.947	3.005	3.065	3.126	Continuing	Continuing

Remarks

FTAS RDTE transitions from Project C3099 to C3773 in FY19.

D. Acquisition Strategy

Long Range Radar (AN/TPS-59) - Due to the proprietary nature of the software, the AN/TPS-59 Program will utilize a sole source contract with the OEM for software and Digital Receiver and Exciter development. The AN/TPS-59 Program will utilize full and open competition to the max extent possible on areas that do not have proprietary restrictions.

Family of Target Acquisition Systems (FTAS) - The Family of Target Acquisition Systems consists of 3 major components: AN/TPQ-46, AN/TPQ-49 and the AN/TSQ-267. Of these 3 systems, the AN/TPQ-46 is due to be replaced by the Ground/Air Task Oriented Radar (G/ATOR) beginning in 2019. Sustainment activities during 2016 and beyond will be limited to maintain the authority to operate (ATO) creditation. Sustainment activities on the AN/TPQ-49 are escalating due to the fact the US Army divested from the AN/TPQ-49, the USMC has assumed the responsibilities of the primary inventory control activity (PICA). Program Office will conduct an engineering change to the AN/TPQ-49 to provide the operating forces with a mobile, stand-alone configuration. Sustainment activities on the AN/TPQ-46 will begin to escalate due to the US Army divestiture from the AN/TPQ-36. The USMC will assume some sustainment responsibilities for the AN/TPQ-46 until replaced by G/ATOR. Additionally, the AN/TSQ-267 requires hardware updates in order to continue housing the suite of equipment that supports the Target Processing Center (TPC) activities.

Short/Medium Range Air Defense Radar (AN/TPS-63 or SHORAD) - The AN/TPS-63 is currently in disposal.

Virtual Warfare Center (VWC) Support - The project team conducts fully interactive simulated war games at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the Integrated Air and Missile Defense (IAMD) mission area. VWC support encompasses a set of integrated fire control (IFC) activities that also includes concept/CONOPS development, family of systems architecture development, and systems engineering/integration efforts. The Office of Naval Research (ONR) is the lead for all VWC contracting actions.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59 - DREX EDM Development	SS/CPFF	LMC : SYRACUSE, NY	0.000	3.254	Aug 2017	4.500	Dec 2017	4.008	Dec 2018	-		4.008	0.000	11.762	-
AN/TPS-59 - Winload Test Set Development	WR	NSWC Crane : CRANE, IN	0.000	0.184	Aug 2017	0.000		0.000		-		0.000	0.000	0.184	-
AN/TPS-59 - DREX Test Enviornment	SS/CPFF	LMC : SYRACUSE, NY	0.000	0.000		2.128	Dec 2017	0.000		-		0.000	0.000	2.128	-
AN/TPS-59 DREX EDM Development Program Management	SS/CPFF	LMC : SYRACUSE, NY	0.000	1.409	Aug 2017	0.000		0.334	Sep 2019	-		0.334	0.000	1.743	-
AN/TPS-59 - UPS Development	C/FFP	NSWC Crane : CRANE, IN	0.000	0.016	Mar 2017	0.000		0.000		-		0.000	0.000	0.016	-
AN/TPS-59 - Enhanced Software Development	SS/CPFF	LMC : SYRACUSE, NY	0.000	1.426	Jun 2017	0.000		3.394	Jul 2019	-		3.394	0.000	4.820	-
AN/TPS-59 - Gearbox Mod Kit Development	WR	NSWC Crane : CRANE, IN	0.000	0.035	Feb 2017	0.000		0.000		-		0.000	0.000	0.035	-
AN/TPS-59 - IFF Antenna Development	WR	NSWC Crane : CRANE, IN	0.000	0.059	Jan 2017	0.000		0.000		-		0.000	0.000	0.059	-
FTAS	MIPR	TYAD : TOBYHANNA, PA	0.145	0.448	Mar 2017	1.246	Mar 2018	0.000		-		0.000	0.000	1.839	-
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	84.338	0.000		0.000		0.000		-		0.000	0.000	84.338	-
		Subtotal	84.483	6.831		7.874		7.736		-		7.736	0.000	106.924	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59 - Government Engineering Support	WR	NSWC : PORT HUENEME, CA	0.866	0.000		0.000		0.615	Nov 2018	-		0.615	0.000	1.481	-
AN/TPS-59 - Engineering Support	C/FFP	NSWC : PORT HUENEME, CA	0.000	0.131	Jul 2017	0.000		0.000		-		0.000	0.000	0.131	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59 - Testing Support	C/FFP	NSWC : CRANE, IN	0.000	0.094	Jul 2017	0.000		0.000		-		0.000	0.000	0.094	-
AN/TPS-59 - GFE for Test Asset	C/CPFF	LMC : SYRACUSE, NY	0.000	1.034	Aug 2017	0.000		0.770	Jul 2019	-		0.770	0.000	1.804	-
AN/TPS-59 - Engineering Support	C/FFP	MCSC : QUANTICO, VA	0.000	0.000		3.223	Nov 2017	2.890	Nov 2018	-		2.890	0.000	6.113	-
AN/TPS-59 - Array Erection Development Support	WR	NSWC : CRANE, IN	0.000	0.000		0.600	Feb 2018	0.000		-		0.000	0.000	0.600	-
FTAS	MIPR	TYAD : TOBYHANNA, PA	0.693	0.369	Mar 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
AN/TPS-63	WR	NSWC : CRANE, IN	0.130	0.000		0.198	Mar 2018	0.000		-		0.000	0.000	0.328	-
VWC	C/CPFF	ONR : ST. LOUIS, MO	17.331	2.590	Jul 2017	0.945	Feb 2018	0.813	Feb 2019	-		0.813	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	47.104	0.000		0.000		0.000		-		0.000	0.000	47.104	-
		Subtotal	66.124	4.218		4.966		5.088		-		5.088	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59 - DREX EDM Test & Evaluation	C/CPFF	LMC : SYRACUSE, NY	0.000	0.000		0.000		1.396	Aug 2019	-		1.396	0.000	1.396	-
AN/TPS-59 - IFF Antenna Testing	WR	NSWC : CRANE, IN	0.000	0.000		0.250	Nov 2017	0.000		-		0.000	0.000	0.250	-
AN/TPS-59 -Testing Travel	Various	VARIOUS : VARIOUS	0.000	0.000		0.090	Dec 2017	0.000		-		0.000	0.000	0.090	-
FTAS	WR	MCTSSA : SAN DIEGO, CA	0.000	0.680	Jun 2017	0.391	Feb 2018	0.000		-		0.000	0.000	1.071	-
VWC	C/CPFF	ONR : ST. LOUIS, MO	0.000	0.000		0.444	May 2018	0.315	May 2019	-		0.315	0.000	0.759	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	3.543	0.000		0.000		0.000		-		0.000	0.000	3.543	-
		Subtotal	3.543	0.680		1.175		1.711		-		1.711	0.000	7.109	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59 Engineering Support	MIPR	MITRE : BEDFORD, MA	0.000	0.000		0.000		1.900	Dec 2018	-		1.900	0.000	1.900	-
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	25.981	0.000		0.000		0.000		-		0.000	0.000	25.981	-
		Subtotal	25.981	0.000		0.000		1.900		-		1.900	0.000	27.881	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	180.131	11.729		14.015		16.435		-		16.435	Continuing	Continuing	N/A

Remarks

NOTE: Increase of $2.420M from FY18 to FY19 supports enhanced software development for AN/TPS-59 Tactical Ballistic Missile (TBM) detection as well as enhanced data analysis and engineering modeling of threat profiles to support the TBM software enhancements. The FY 2019 funding request was reduced by $9.553M to account for the availability of prior year execution balances.

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

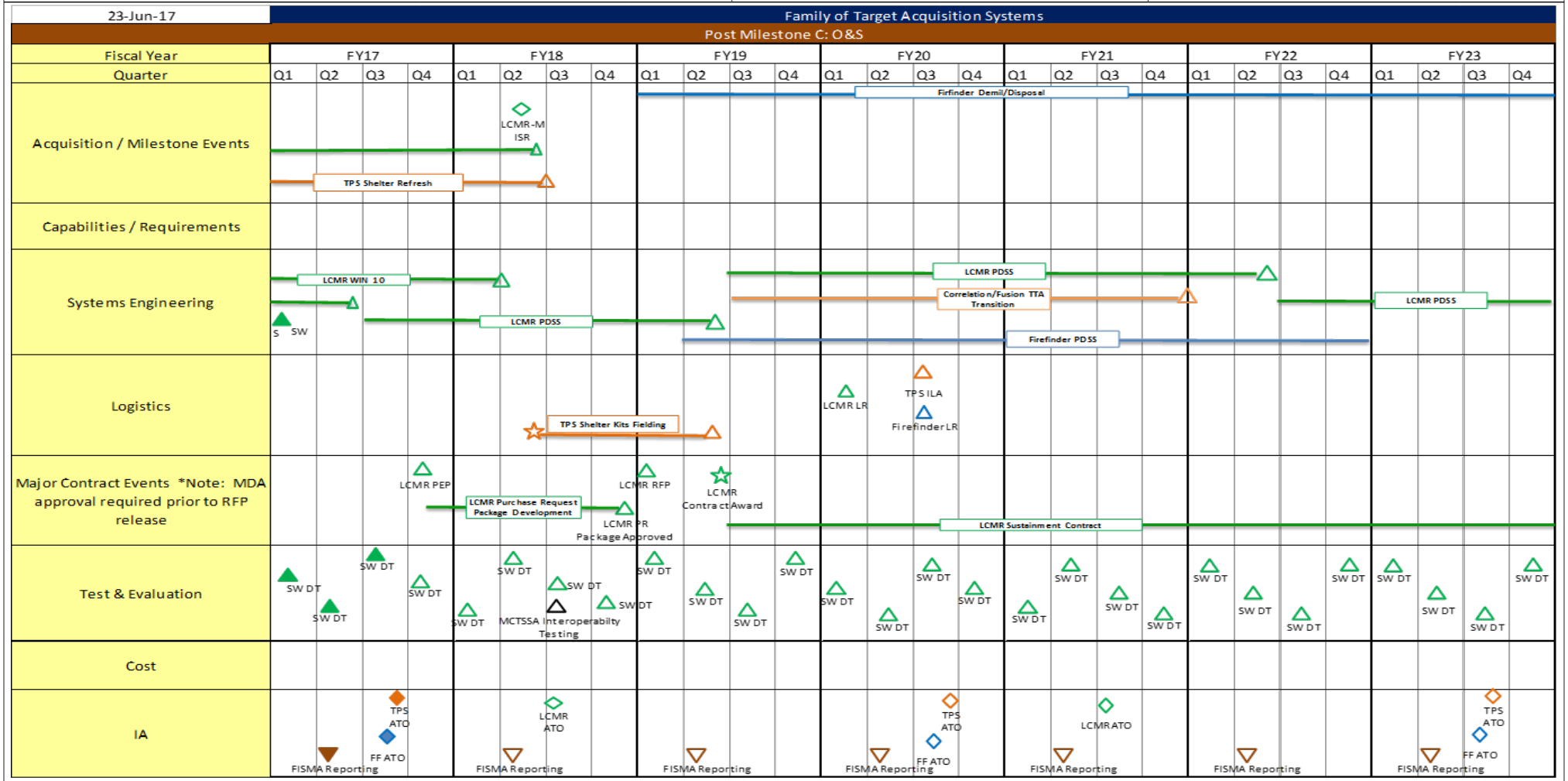


Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

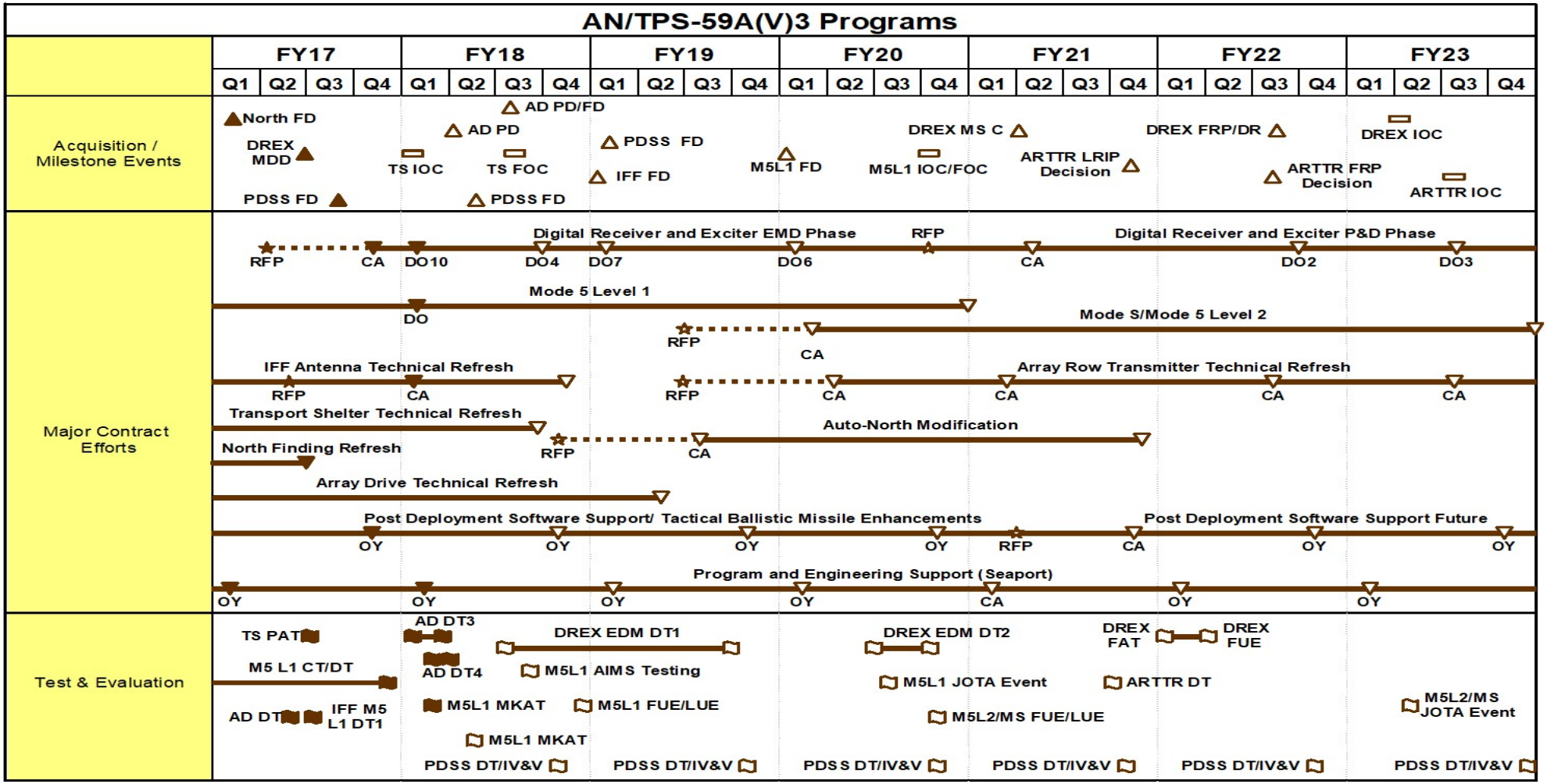


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3099				
FTAS - LCMR Mobile FOC	2	2018	2	2018
FTAS - TPS Shelter Refresh FOC	3	2018	3	2018
AN/TPS-59 IFF Fielding Decision	1	2019	1	2019
AN/TPS-59 PDSS TBM Fielding Decision	1	2019	1	2019
AN/TPS-59 DREX Delivery Order 7 Award	1	2019	1	2019
AN/TPS-59 PDSS TBM Option Year Award	4	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 3772 / *Information Related Capabilities (IRC)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3772: *Information Related Capabilities (IRC)*	0.000	0.000	0.000	5.716	-	5.716	4.349	3.311	1.996	2.264	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY19, Marine Civil Information Management System (MARCIMS), Public Affairs System (PAS) and Military Information Support Operations (MISO) funding has been realigned from project 2277, System Engineering & Integration. Realignment of efforts to new projects in FY19 and beyond reflects USMC Program Management Office (PMO) reorganization to improve support of USMC OPFOR.

A. Mission Description and Budget Item Justification

Marine Civil Information Management System (MARCIMS) is a system of systems comprised of people, process and technology that operates in the full Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment. It is a force multiplier for the commander that allows him to leverage the process of Planning, Collection, Consolidation, Analysis, Production, and sharing of civil information in order to support the visualization and understanding of the civil environment to the military commander's decision making process. This program transitions from C2277 to C3772 in FY19.

Public Affairs System (PAS) provides the Marine Air Ground Task Force (MAGTF) and the broader Marine Corps the capability to research, understand and affect the information environment. PA Marines and Systems enable commanders at all levels and across the range of military operations to engage domestic and foreign publics whose trust, confidence, and understanding are mission critical. The Public Affairs Systems (PAS) AAP identifies and fields materiel solutions required to research and plan communication initiatives, acquire still and video visual information, produce and disseminate communication products, and assess the effects of communication initiatives within the information environment. The program maintains an evolutionary approach to acquisitions, and leverages commercial industry-standard non-developmental items to provide the best value to the Marine Corps, while keeping PA Marines appropriately equipped to understand and affect the information environment. This effort supports research and evaluate solutions to modernize the Public Affairs Still Acquisition System into a single handheld device with the capability to acquire, edit and transmit still and video imagery and engage publics via traditional and social media. This program transitions from C2277 to C3772 in FY19.

The Military Information Support Operations (MISO) Family of Systems (FOS), which consists of the Fly-Away Broadcast System (FABS), Next-Generation Loud Speaker (NGLS), Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MISN), provides the Marine Air Ground Task Force (MAGTF) Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage. The MISO was established in response to multiple Marine Requirements Oversight Council Memorandums, and the approval of a MISO Organizational and Operational (O&O) Concept, 16 June 2015. MISO capabilities are critical to the success of the MAGTF mission, enabling commanders to shape the information environment, counter enemy propaganda, misinformation, disinformation, and adversarial narratives. The Signature Management (SIGMAN) capability will support MAGTF Operations with a baseline capability to include Own-force signature monitoring and assessment, Electromagnetic signature masking and projection, and physical decoys. This program transitions from C2277 to C3772 in FY19.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3772 / *Information Related Capabilities (IRC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Public Affairs System (PAS): Product Development	0.000	0.000	0.092	0.000	0.092
Articles:	-	-	-	-	-
Description: Program transitions from C2277 to C3772 in FY19. ***FY 2018 Plans:*** - Under Project C2277 ***FY 2019 Base Plans:*** - Continue the research and evaluation of solutions to modernize the Public Affairs Live Media Engagement System (PALMES) with the capability to transmit imagery and engage publics via traditional and social media via Military Satellite Communications (MILSATCOM). These actions will include the evaluation of device solutions and research of information assurance requirements to accredit the Public Affairs transmission capability. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** - Increase of $0.92M from FY18 to FY19 reflects movement from C2277 to C3772.					
Title: Military Information Support Operations (MISO): Product Development	0.000	0.000	2.608	0.000	2.608
Articles:	-	-	-	-	-
Description: The MISO Family of Systems (FOS), which consists of the Fly-Away Broadcast System (FABS), Next-Generation Loud Speaker (NGLS), Radio-In-A-Box (RIAB), and Marine Corps SOF Integration Node (MISN), provides the Marine Air Ground Task Force (MAGTF) Commander the capability to conduct planned operations to convey selected information and indicators to foreign adversary, neutral and friendly target audiences to influence their emotions, motives, objective reasoning, providing an operational advantage. FY18 initiates product development of the Fly-Away Broadcast System (FABS) in preparation for a MS B decision. Program transitions from C2277 to C3772 in FY19. ***FY 2018 Plans:*** - Under Project C2277 ***FY 2019 Base Plans:*** - Continue engineering and manufacturing development of the Fly-Away Broadcast System (FABS).					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3772 / *Information Related Capabilities (IRC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Initiate research and development efforts for Signature Management (SIGMAN) and tactical deception capabilities. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** - Increase of $2.068M from FY18 to FY19 reflects movement from C2277 to C3772.					
Title: MISO: Test and Evaluation	0.000	0.000	3.016	0.000	3.016
Articles:	-	-	3	-	3
FY 2018 Plans: - Project under C2277 ***FY 2019 Base Plans:*** - Initiate test and evaluation activities for Fly-Away Broadcast System (FABS). - Initiate procurement of 3 test assets (Small, Medium, Heavy) - Increase of $3.016M from FY18 to FY19 reflects development testing schedule for FABS. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $3.016M from FY18 to FY19 reflects movement from project C2277 to project C3772. Increase supports testing schedule for FABS.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	5.716	0.000	5.716

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/4620AA: *MARCIMS*	0.227	0.235	0.296	-	0.296	0.000	0.302	0.000	0.308	Continuing	Continuing
• PMC/4620BB: *PAS*	0.929	1.913	0.682	-	0.682	0.691	0.710	0.722	0.736	Continuing	Continuing
• PMC/4620CC: *MISO*	0.000	0.000	2.976	-	2.976	8.364	9.924	9.938	7.853	Continuing	Continuing
• 0206313M/C2277A: *MARCIMS*	0.164	0.422	0.000	-	0.000	0.439	0.000	0.000	0.000	Continuing	Continuing
• 0206313M/C2277B: *PAS*	0.090	0.093	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.183
• 0206313M/C2277C: *MISO*	0.000	3.055	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.055

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3772 / *Information Related Capabilities (IRC)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost

Remarks

MARCIMS, PAS, MISO transition from C2277 to C3772 in FY19.

D. Acquisition Strategy

MARCIMS will continue to support and sustain the current baseline system, while employing incremental changes to ensure that the system not only meets current requirements per the Letter of Clarification, but also allows for a more user friendly system. MARCIMS plans to begin development of MARCIMS 2.0 in a partnership with the Office of Naval Research (ONR), while simultaneously maintaining the current and approved version of the system.

Public Affairs System will maximize the utilization of commercial-off-the-shelf devices and software to provide best overall performance solutions to the warfighter with minimal developmental cost and schedule investments.

MISO will complete a production design of the FABS, validate production requirements, manage FABS technical risk and define system support requirements in FY18, leading to a MS B decision in Q2 FY18, MS C / LRIP decision in Q4 FY19, and an FRP decision in Q3 FY20.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3772 / *Information Related Capabilities (IRC)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MISO	WR	TBD : TBD	0.000	0.000		0.000		1.526	Apr 2019	-		1.526	Continuing	Continuing	Continuing
MISO	WR	SSC-PAC : San Diego, CA	0.000	0.000		0.000		1.082	Apr 2019	-		1.082	Continuing	Continuing	Continuing
PAS	WR	SSC-PAC : San Diego, CA	0.000	0.000		0.000		0.092	Mar 2019	-		0.092	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		2.700		-		2.700	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MISO	WR	SSC-LANT : Charleston, SC	0.000	0.000		0.000		3.016	Feb 2019	-		3.016	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		3.016		-		3.016	Continuing	Continuing	N/A

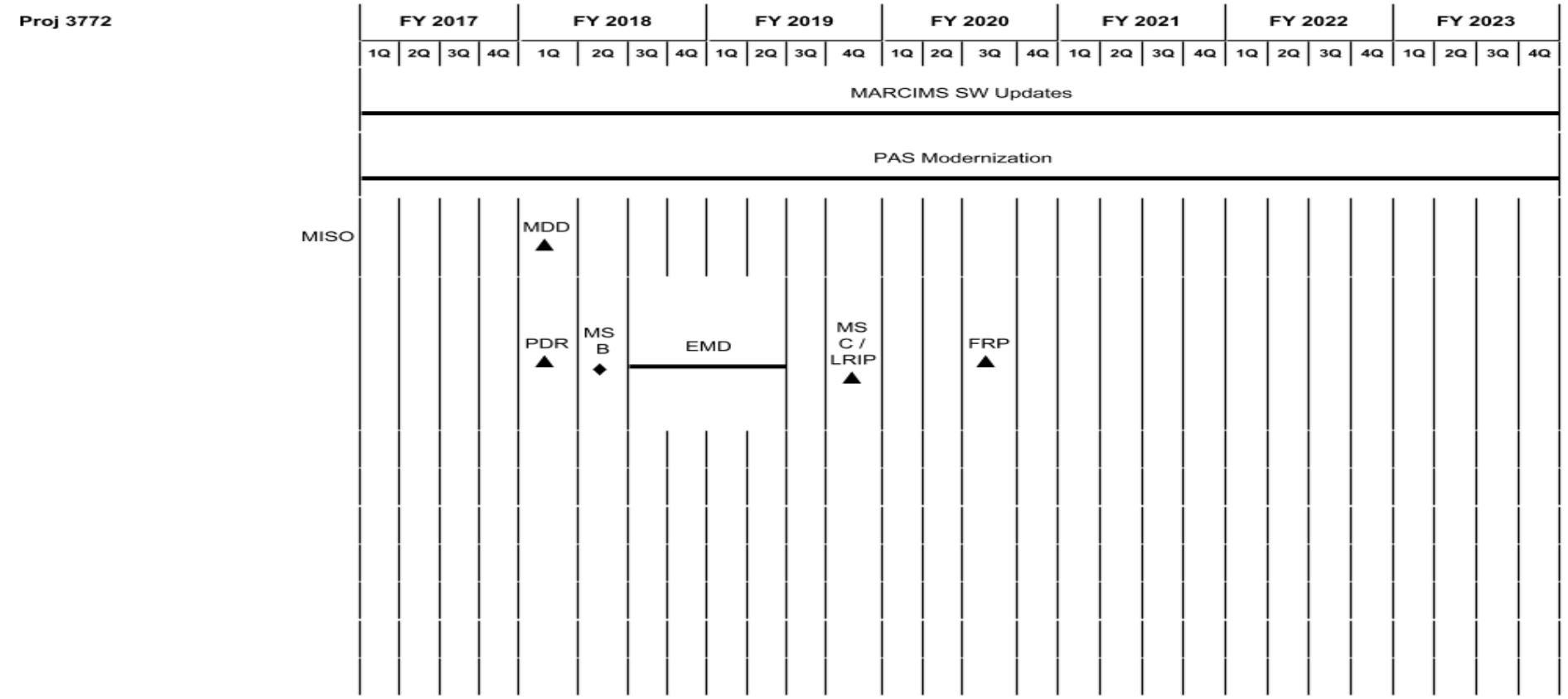
Remarks

MISO includes procurement of 3 test assets and test and evaluation support.

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		5.716		-		5.716	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3772 / *Information Related Capabilities (IRC)*



2019DON - 0206313M - 3772

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3772 / *Information Related Capabilities (IRC)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3772				
MARCIMS SW Updates	1	2017	4	2023
PAS Modernization	1	2017	4	2023
MISO: MDD	1	2018	1	2018
MISO: PDR	1	2018	1	2018
MISO: MS B	2	2018	2	2018
MISO: EMD	3	2018	2	2019
MISO: MS C / LRIP	4	2019	4	2019
MISO: FRP	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 3773 / *Fire Coordination and Sensors*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3773: *Fire Coordination and Sensors*	0.000	0.000	0.000	7.910	-	7.910	7.801	7.989	8.155	8.322	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS) - AFATDS FoS consists of three programs, AFATDS, Back Up Computer System (BUCS) and Mobile Tactical Shelter (MTS). The AFATDS automates the fire planning, tactical fire direction, and fire support coordination required to support maneuver from the sea and subsequent operations ashore. AFATDS integrates all supporting arms assets within the MAGTF such as mortars, cannon artillery, rockets and missiles, close air support, and naval surface fire support systems. BUCS is a hand-held computer system designed to provide a backup to the AFATDS in computing ballistic firing solutions, as well as provide survey and Meteorological functions in support of artillery. Additionally BUCS is the primary ballistic firing solution system during Ship To Objective Maneuver (STOM) and for the Expeditionary Fire Support System (EFSS). The MTS is a Lightweight Multi-purpose Shelter mounted on a High Mobility Multipurpose Wheeled Vehicle (HMMWV) which protects both the AFATDS and operators from the environment. MTS enables rapid emplacement and displacement of fire support elements and provides networked communications on the move.

Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify, and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder Radar, the AN/TPQ-49 Lightweight Counter Mortar Radar, and the AN/TSQ-267 Target Processing Set. The FTAS is critical in the execution of counterfire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. The program will continue to address system issues that arise due to DMSMS items within the FTAS. The USMC assumed the role of Primary Inventory Control Activity (PICA) for the AN/TPQ-49 in FY15 when the Army divested itself from the system.

Target Hand-Off System (THS) - The THS addressed a Marine Corps operational requirement for a lightweight, handheld, and accurate target acquisition engagement coordination system. THS provides MAGTF Commanders with the only man-portable target location capability that allows Air Officers and Fire Support Coordinators to prosecute identified targets. The THS' advance interoperability capability provides the MAGTF Commander with the only portable target acquisition system able to interoperate with all target prosecution platforms available in the battlefield. The THS is designed for the Forward Air Controllers (FACs), Forward Observers (FOs), Fire Support Teams (FSTs), Firepower Control Teams (FCTs), Tactical Air Control Parties (TACPs) and Reconnaissance Teams to quickly acquire targets in day, night and near-all-weather visibility conditions, in order to conduct precise, rapid indirect surface fire support, Naval Surface Fire Support (NSFS) and Close Air Support (CAS).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: FTAS: Product Development	0.000	0.000	1.246	0.000	1.246
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: - See Project C3099. ***FY 2019 Base Plans:*** - Initiate development of Lightweight Counter Mortar Radar (LCMR) tech refresh system. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems.					
Title: FTAS: Test and Evalution	0.000	0.000	0.380	0.000	0.380
Articles:	-	-	-	-	-
FY 2018 Plans: - See Project C3099. ***FY 2019 Base Plans:*** - Continue interoperability testing for the Family of Target Acquisition Systems (FTAS) integration within the Marine Air-Ground Task Force (MAGTF). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, FTAS funding has been realigned from project 3099 Radar Systems.					
Title: AFATDS: Software Development and Integration	0.000	0.000	4.456	0.000	4.456
Articles:	-	-	-	-	-
FY 2018 Plans: - See Project C2270. ***FY 2019 Base Plans:*** - Continue development of AFATDS software version 7.0. - Initiate the development of the next generation Back-Up Computer System (BUCS). ***FY 2019 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, AFATDS funding has been realigned from project 2270 Radar Systems.					
Title: AFATDS: Test and Evaluation	0.000	0.000	0.500	0.000	0.500
Articles:	-	-	-	-	-
FY 2018 Plans: - See Project C2270. ***FY 2019 Base Plans:*** - Continue interoperability testing for AFATDS and BUCS software between all required Joint C2 and Fires systems. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, AFATDS funding has been realigned from project 2270 Radar Systems.					
Title: AFATDS: Management Services	0.000	0.000	0.650	0.000	0.650
Articles:	-	-	-	-	-
FY 2018 Plans: - See Project C2270. ***FY 2019 Base Plans:*** - Continue to provide Engineering Support personnel and travel. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, AFATDS funding has been realigned from project 2270 Radar Systems.					
Title: THS: Product Development	0.000	0.000	0.678	0.000	0.678
Articles:	-	-	-	-	-
FY 2018 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
see project 2270 ***FY 2019 Base Plans:*** -Continue development of THS V2 software. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Beginning in FY19, THS funding has been realigned from project 2270 Radar Systems.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	7.910	0.000	7.910

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/473300: *Family of Target Acq Systems (FTAS)*	0.000	0.000	2.867	-	2.867	2.947	3.005	3.065	3.126	Continuing	Continuing
• PMC/473301: *Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS)*	0.000	0.000	12.521	-	12.521	12.852	15.531	15.908	16.245	Continuing	Continuing
• RDTE/C2270: *Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS)*	3.114	5.881	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.995
• RDTE/C3099: *Family of Target Acq Systems (FTAS)*	1.497	1.637	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.134
• PMC/463100: *Target Handoff System (THS)*	0.000	22.350	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	22.350
• PMC/47330: *Target Handoff System (THS)*	0.000	0.000	24.739	-	24.739	2.439	2.487	2.537	2.588	Continuing	Continuing
• PMC/463101: *Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS)*	3.596	15.697	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

D. Acquisition Strategy

Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS) - AFATDS is managed through Army CECOM, Aberdeen Proving Ground, MD. R&D efforts for the next AFATDS version will be a combined effort between the software developer, the Army PM, and the USMC for software enhancements through DISA. Current software enhancements are performed at Army, Ft. Sill, OK.

Family of Target Acquisition Systems (FTAS) - The Family of Target Acquisition Systems consists of 3 major components: AN/TPQ-46, AN/TPQ-49 and the AN/TSQ-267. Of these 3 systems, the AN/TPQ-46 is due to be replaced by the Ground/Air Task Oriented Radar (G/ATOR) beginning in 2019. Sustainment activities during 2016 and beyond will be limited to maintain the authority to operate (ATO) creditation. Sustainment activities on the AN/TPQ-49 are escalating due to the fact the US Army divested from the AN/TPQ-49, the USMC has assumed the responsibilities of the primary inventory control activity (PICA). Program Office will conduct an engineering change to the AN/TPQ-49 to provide the operating forces with a mobile, stand-alone configuration. Sustainment activities on the AN/TPQ-46 will begin to escalate due to the US Army divestiture from the AN/TPQ-36. The USMC will assume some sustainment responsibilities for the AN/TPQ-46 until replaced by G/ATOR. Additionally, the AN/TSQ-267 requires hardware updates in order to continue housing the suite of equipment that supports the Target Processing Center (TPC) activities.

THS: The acquisition of components (software/hardware) for the THS initiative will maximize the use of existing COTS, Government-Off-The-Shelf (GOTS), Non-Developmental Item (NDI), and Government Furnished Equipment (GFE). Software is transitioning to a government owned baseline. Software must maintain compatibility with five Programs of Record (POR) and seven Operational Flight Programs (OFP).

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FTAS	C/FFP	TBD : TBD	0.000	0.000		0.000		1.246	Feb 2019	-		1.246	0.000	1.246	-
AFATDS	MIPR	DISA : Belleville, IL	0.000	0.000		0.000		4.456	Feb 2019	-		4.456	0.000	4.456	-
THS	C/CPFF	Army : Huntsville, AL	0.000	0.000		0.000		0.678	Jan 2019	-		0.678	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		6.380		-		6.380	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FTAS	WR	MCTSSA : CAMP PENDLETON, CA	0.000	0.000		0.000		0.380	Feb 2019	-		0.380	0.000	0.380	-
AFATDS	C/FFP	MCTSASA : CAMP PENDLETON, CA	0.000	0.000		0.000		0.500	Feb 2019	-		0.500	0.000	0.500	-
		Subtotal	0.000	0.000		0.000		0.880		-		0.880	0.000	0.880	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFATDS	C/CPFF	CECOM/MITRE : Ft. Monmouth, NJ	0.000	0.000		0.000		0.650	Nov 2018	-		0.650	0.000	0.650	-
		Subtotal	0.000	0.000		0.000		0.650		-		0.650	0.000	0.650	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		7.910		-		7.910	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

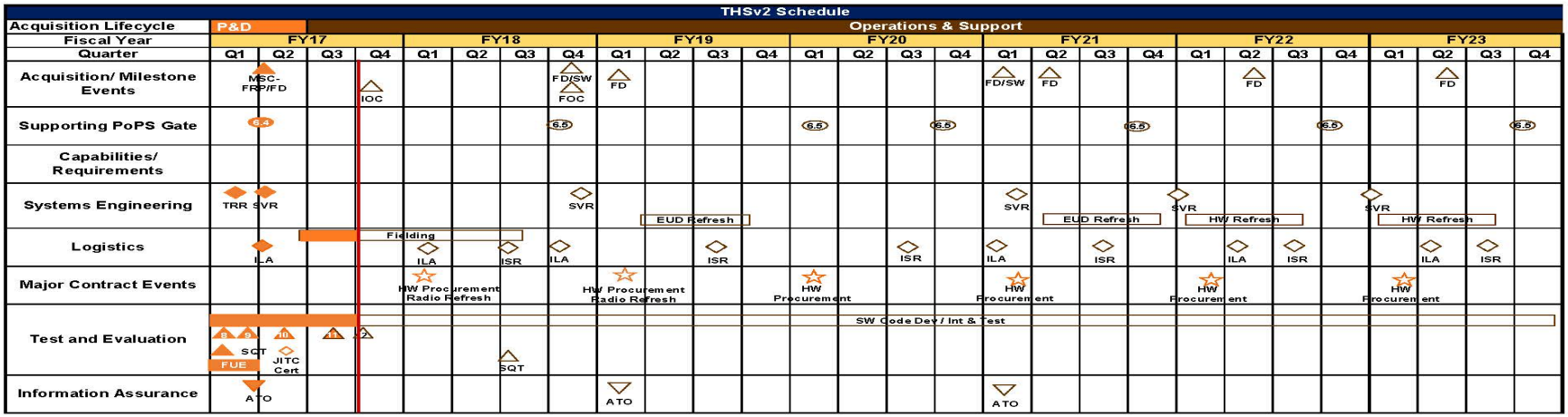


Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

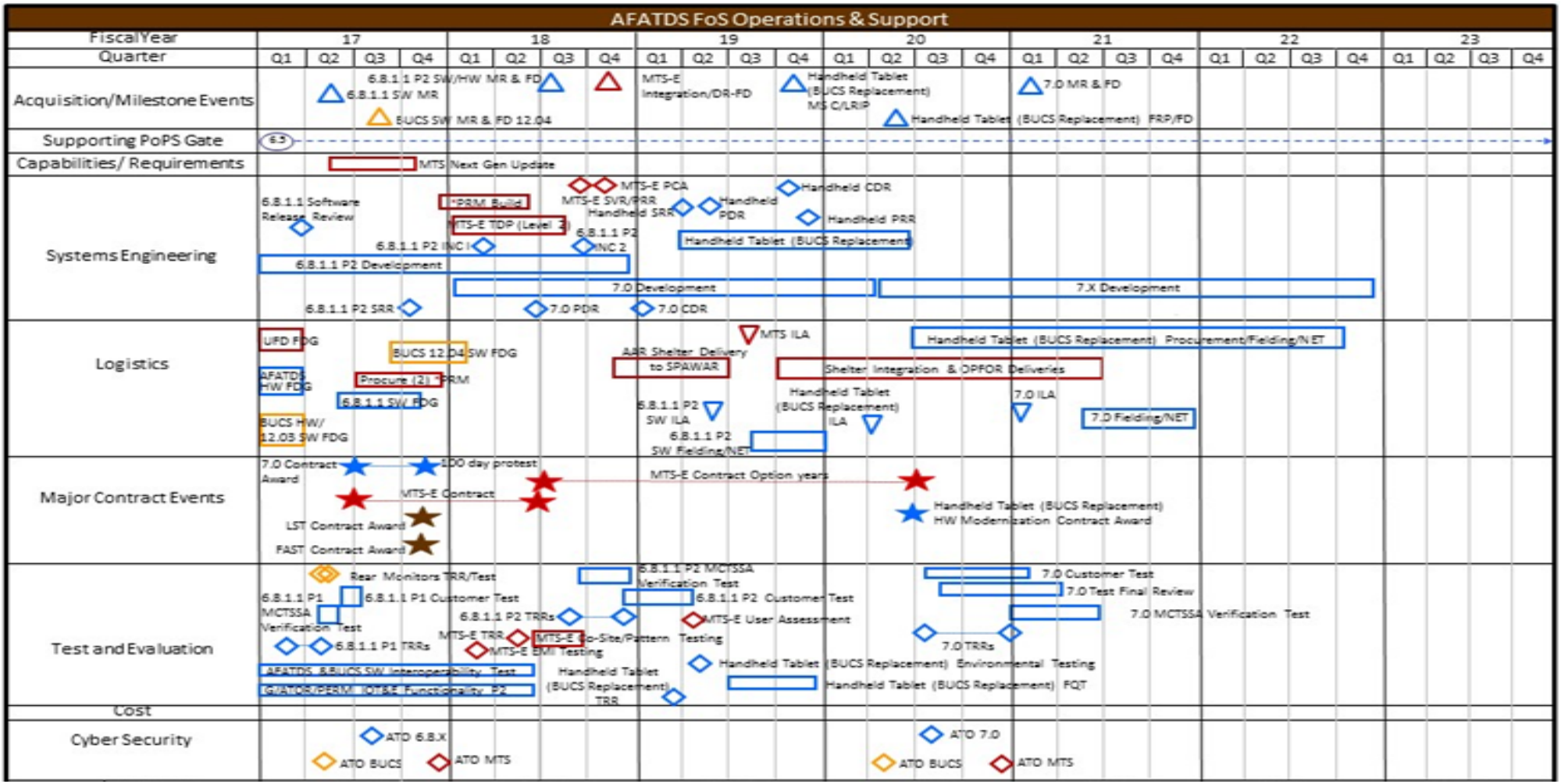


Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

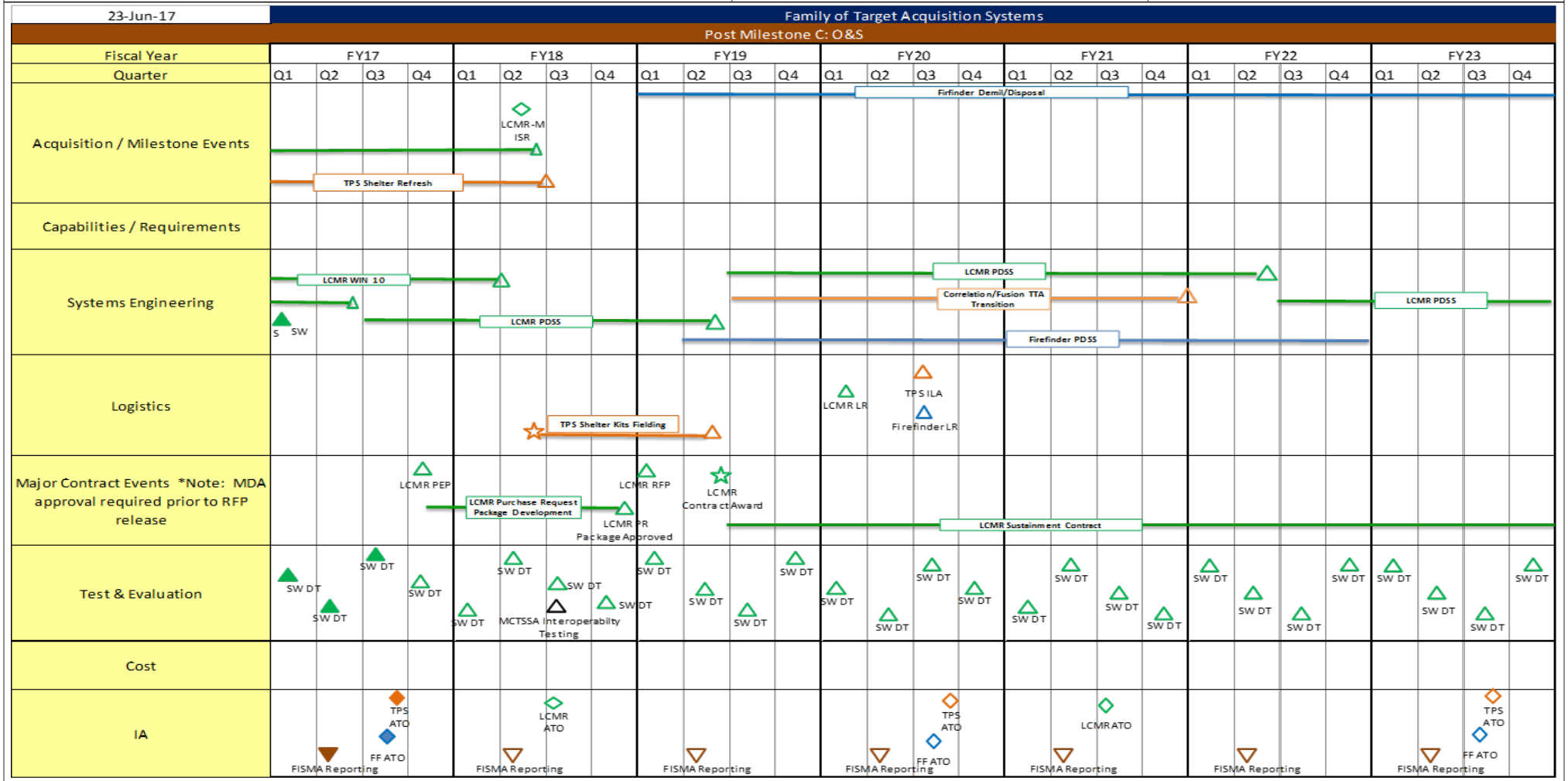


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3773 / *Fire Coordination and Sensors*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3773				
AFATDS 7.0 Software Development	1	2018	2	2020
AFATDS 7.0 Testing	3	2020	3	2021
FTAS - LCMR FOC	2	2018	2	2018
FTAS - TPS Shelter Refresh FOC	3	2018	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
9999: *Congressional Adds*	12.552	17.409	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.961
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Congressional Add, not required for BES/PB-19

A. Mission Description and Budget Item Justification

Joint Interoperability of Tactical Command and Control Systems (JINTACCS) $5.803M - The USMC JINTACCS program provides for critical engineering services. JINTACCS is essential to USMC development and maintenance of tactical data exchange standards (Link 16, Variable Message Format (VMF), United States Message Text Format (USMTF), etc.) focused on achieving Joint interoperability through: (1) the standardization of message protocols, format, content, implementation, and documentation; (2) the assessment and identification of Tactical Data Link (TDL) and tactical data message interoperability shortfalls and their impact to interoperability; (3) the alignment of TDL and tactical data message implementation with desired capabilities; and (4) the posturing Marine Corps TDL and tactical data message users for migration to emerging formats and transmission waveforms. This includes: (1) The continued exploration of solutions for addressing a Joint capability gap in tactical radio bridging; (2) Implementation and management of the Marine Corps Interoperability Enhancement Program (IEP), a Chairman Joint Chief of Staff Instruction (CJCSI) 6610.01E required process for using automated tools and procedures to assess bit-level interoperability of systems implementing TDL and tactical data messages and document Marine Corps systems' TDL bit-level message implementation; and (3) Expand TDL and VMF support to include Marine Corps aviation and intelligence systems to ensure adherence to standards and to enable interoperability with Joint and Allied command and control and weapon systems.

Long Range Radar (AN/TPS-59) $11.606M - The AN/TPS-59A(V)3 is a transportable, three dimensional, tactical radar system that provides the Marine Air Ground Task Force (MAGTF) with long-range surveillance. It is the MAGTF's only ground based long range sensor that provides the capability to detect and report Air Breathing Targets (ABT) and track Theater Ballistic Missiles (TBM). The AN/TPS-59A(V)3 Radar System is connected to the Common Aviation Command and Control Systems (CAC2S). It provides the air defense controllers data and may be used autonomously to conduct Ground control Intercept, tactical en-route Air Traffic Control (ATC), or TBM alert operations via the joint Integrated Air Missile Defense (IAMD) encrypted Link-16. The USMC extended the AN/TPS-59 service life through 2035; therefore, in order to maintain its operational relevance on the battlefield, a number of modernization efforts are being initiated. The Digital Receiver and Exciter (DREX) upgrade will convert the analog receivers and exciters to digital to address Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues, enable spectral agility, reduce noise, reduce false alarms, and enhance electronic counter-countermeasures (ECCM) capability. This effort will include an essential simulation and test environment capability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018
Congressional Add: Program Increase	5.803	0.000
FY 2017 Accomplishments: JINTACCS Congressional Program Increase:		

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018
-Initiated testing, analyzed and evaluated the suitability of Multi-Media Gateways to provide effective, technical interfaces between tactical C4I systems and commercial networks & systems in support of MAGTF HA/DR operations. To include: procurement of test items, Test Plan / Test Procedures, Safety Analysis, and Information Assurance; setup of Free Space Optics in demonstration, and classified Electronic Warfare analysis. Actual test event will be executed in FY18. -Initiated the implementation of eSMART for bit-level interoperability assessment of USMC ground C2 systems within PEO-LS/MARCORSYSCOM -Initiated VMF SME support to PEO-LS/MARCORSYSCOM programs to ensure USMC Ground, tactical C4I systems adhere to established DoD standards and enable interoperability with Joint and Allied command and control and weapon systems. *JINTACCS Congressional Program Increase received July 2017 ***FY 2018 Plans:*** N/A		
Congressional Add: Radar Enhancements ***FY 2017 Accomplishments:*** -Developed Mode 5 Level 1. -Developed Digital Receiver and Exciter (DREX) Engineering Development Model (EDM). -Developed Enhanced Software for Tactical Ballistic Missile (TBM). ***FY 2018 Plans:*** N/A	11.606	0.000
Congressional Adds Subtotals	17.409	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• PMC/465000: *AN/TPS-59 Mods*	14.076	8.956	6.694	-	6.694	10.460	12.265	16.140	16.473	Continuing	Continuing
• RDTE/0206313M/ C3099: *AN/TPS-59 Mods*	7.642	10.791	15.307	-	15.307	19.584	17.322	17.162	12.421	Continuing	Continuing
• RDTE/0206313M/C2277: *JOINT INTEROPERABILITY OF TACT C2 SYSDescription.*	0.582	0.572	0.570	-	0.570	0.579	0.590	0.600	0.612	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 9999 / *Congressional Adds*

D. Acquisition Strategy

Long Range Radar (AN/TPS-59) - Due to the proprietary nature of the software, the AN/TPS-59 Program will utilize a sole source contract with the OEM for software and Digital Receiver and Exciter development. The AN/TPS-59 Program will utilize full and open competition to the max extent possible on areas that do not have proprietary restrictions.

JINTACCS - Explore solutions for addressing a Joint capability gap in tactical radio bridging. The research will continue investigations of materiel products that address the shortfalls in the ability to bridge voice, data and video between disparate tactical Command, Control, Communications and Computer (C4) systems utilizing multi-media gateways. Implement the USMC Interoperability Enhancement Process (IEP) through the Interoperable Systems Management and Requirements Transformation (iSMART) processes, the Enhanced Systems Management and Requirements Transformation (eSMART) tool set, and the Joint Capabilities and Limitations (JC&L) interoperability tool, IAW CJCSI 6610.01E.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 9999 / *Congressional Adds*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59 Enhanced Software Development for TBM	SS/CPFF	LMC : Syracuse, NY	0.000	3.510	Jul 2017	0.000		0.000		-		0.000	0.000	3.510	-
AN/TPS-59 DREX EDM Development	SS/CPFF	LMC : Syracuse, NY	0.000	5.340	Aug 2017	0.000		0.000		-		0.000	0.000	5.340	-
AN/TPS-59 Mode 5 Level 1 Development	SS/CPFF	LMC : Syracuse, NY	0.000	1.093	Dec 2017	0.000		0.000		-		0.000	0.000	1.093	-
JINTACC-TSOA Data Transit Development	C/FFP	PfM CES : Quantico, VA	0.000	0.600	Oct 2017	0.000		0.000		-		0.000	0.000	0.600	-
JINTACC-JTCW Integration	C/FFP	PfM CES : Quantico, VA	0.000	0.575	Feb 2018	0.000		0.000		-		0.000	0.000	0.575	-
JINTACC-WALDO Integration	MIPR	SSC-A : Charleston, SC	0.000	0.300	Sep 2017	0.000		0.000		-		0.000	0.000	0.300	-
Prior Year Cumulative Funding	Various	Various : Various	1.766	0.000		0.000		0.000		-		0.000	0.000	1.766	-
		Subtotal	1.766	11.418		0.000		0.000		-		0.000	0.000	13.184	N/A

Remarks

*JINTACCS Congressional Program Increase received July 2017

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JINTACC-Safety Support to Testing	C/BA	NSWC : Various	0.000	0.275	Oct 2017	0.000		0.000		-		0.000	0.000	0.275	-
JINTACC-eSMART implementation	C/BA	DTIC/MANTECH : Quantico, VA	0.000	0.300	Nov 2017	0.000		0.000		-		0.000	0.000	0.300	-
JINTACC-VMF Integration Support	C/BA	HHS/CSRA : Falls Church, VA	0.000	0.200	Nov 2017	0.000		0.000		-		0.000	0.000	0.200	-
JINTACC-Travel	Various	Various : Various	0.000	0.050	Aug 2017	0.000		0.000		-		0.000	0.000	0.050	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 9999 / *Congressional Adds*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	7.943	0.000		0.000		0.000		-		0.000	0.000	7.943	-
		Subtotal	7.943	0.825		0.000		0.000		-		0.000	0.000	8.768	N/A

Remarks

*JINTACCS Congressional Program Increase received July 2017

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JINTACC-Multi-Media Suitability Testing	MIPR	Naval Research Laboratory : Washington DC	0.000	2.703	Aug 2017	0.000		0.000		-		0.000	0.000	2.703	-
JINTACC-Multi-Media Suitability Testing Support	MIPR	NSWC : Carderock, Maryland	0.000	0.470	Sep 2017	0.000		0.000		-		0.000	0.000	0.470	-
JINTACC-WALDO Assesment	MIPR	CECOM/MITRE : Mclean, VA	0.000	0.330	Nov 2017	0.000		0.000		-		0.000	0.000	0.330	-
Prior Year Cumulative Funding	Various	Various : Various	0.210	0.000		0.000		0.000		-		0.000	0.000	0.210	-
		Subtotal	0.210	3.503		0.000		0.000		-		0.000	0.000	3.713	N/A

Remarks

*JINTACCS Congressional Program Increase received July 2017

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59 Engineering Support	SS/FFP	MITRE : Bedford, MA	2.633	1.663	Sep 2017	0.000		0.000		-		0.000	0.000	4.296	-
		Subtotal	2.633	1.663		0.000		0.000		-		0.000	0.000	4.296	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 9999 / *Congressional Adds*	

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.552	17.409		0.000		0.000		-		0.000	0.000	29.961	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 9999 / *Congressional Adds*

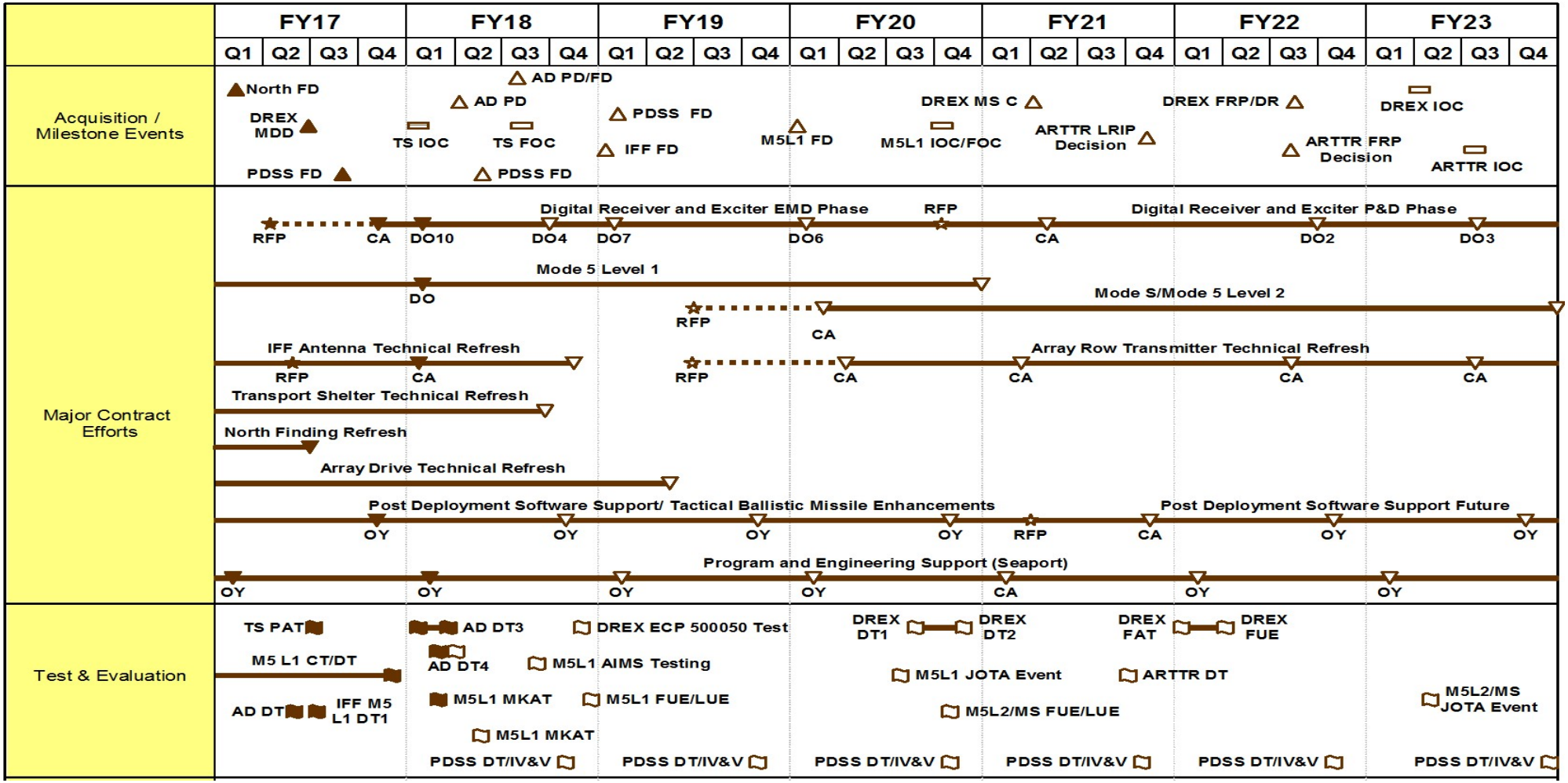


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
AN/TPS-59 DREX EMD Phase Contract Award	4	2017	4	2017