Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy											Date: May 2017	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305232M / *RQ-11 UAV*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	2.807	0.635	0.418	2.022	-	2.022	0.535	0.521	0.532	0.545	Continuing	Continuing
2292: *Unmanned Air Systems (Intel)*	2.807	0.635	0.418	2.022	-	2.022	0.535	0.521	0.532	0.545	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Small Unit Remote Scouting System (SURSS) - The SURSS program procures unmanned aircraft systems (UAS) to provide battalion/company/detachment level units with scalable airborne reconnaissance and surveillance to aid in detecting, identifying, engaging, or avoiding enemy units. Multiple systems, to include RQ-12 Wasp, RQ-11 Raven, RQ-20 Puma and various Nano/VTOL UAS's are required to meet various operational requirements delineated in the Operational Requirements Document. The SURSS program also conducts Field User Evaluations (FUEs) to support Universal Urgent Needs Statements (UUNS) that inform future USMC system procurement and ensure Marines have the most current technology available.

Development efforts for SURSS are ongoing in order to keep Group I-II UAS capability in line with emerging technologies and threats. SURSS is developing a Single Operator Man-Portable Ground Control System (SOMGCS) to improve portability and digital interoperability. Mobile ad-hoc network (MANET) communication relay, laser marker, and Signals Intelligence payloads integration are being developed to improve effectiveness and interoperability to better support the warfighter. Improvements such as solar technology, improved batteries, software upgrades, and alternative repair components are being explored to improve effectiveness, reliability, and reduce support costs.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	0.635	0.418	1.510	-	1.510
Current President's Budget	0.635	0.418	2.022	-	2.022
Total Adjustments	0.000	0.000	0.512	-	0.512
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	0.500	-	0.500
• Rate/Misc Adjustments	0.000	0.000	0.012	-	0.012

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Change Summary Explanation

Increase in FY 2018 from FY 2017 of $1.6M is due to increased integration requirement for SOMGCS Software and MANET, as well as beginning integration of the Laser Marker. Operational assessments begin in FY18 for these items as well and equates to the increase in funding from FY17.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305232M / *RQ-11 UAV*	Project (Number/Name) 2292 / *Unmanned Air Systems (Intel)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2292: *Unmanned Air Systems (Intel)*	2.807	0.635	0.418	2.022	-	2.022	0.535	0.521	0.532	0.545	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Unit Remote Scouting System (SURSS) - The SURSS program procures unmanned aircraft systems (UAS) to provide battalion/company/detachment level units with scalable airborne reconnaissance and surveillance to aid in detecting, identifying, engaging, or avoiding enemy units. Multiple systems, to include RQ-12 Wasp, RQ-11 Raven, RQ-20 Puma and various Nano/VTOL UAS's are required to meet various operational requirements delineated in the Operational Requirements Document. The SURSS program also conducts Field User Evaluations (FUEs) to support Universal Urgent Needs Statements (UUNS) that inform future USMC system procurement and ensure Marines have the most current technology available.

RQ-12 Wasp (Block 0) - Wasp is a small, all environment UAS with a wingspan of 3.3 feet weight of 2.25 pounds and endurance of 60 minutes. The payload consists of a gimbaled turret with Electro Optical/Infrared (EO/IR) sensor. It allows maximum portability and provides near real time reconnaissance required by the platoon and rifle squad which reduces the Intelligence, Surveillance, and Reconnaissance (ISR) request-to-response timeframe and eliminates delays or denials for coverage due to an imbalance of unmanned air systems to requests. Wasp is used for remote reconnaissance and surveillance, force protection, convoy security, target acquisition, and battle damage assessment. A Wasp system consists of two air vehicles, two GCSs, and one reconnaissance, surveillance, and target acquisition (RSTA) kit.

RQ-11 Raven (Block 1) - Raven is a small UAS with a wingspan of 4.6 feet, weight of 5 pounds and endurance of 90 minutes. The Raven employs a gimbaled EO/IR sensor. The Raven can be carried by personnel on foot and provides the company level unit an organic near real time ISR capability that facilitates rapid battlefield decision making. A Raven system consists of three air vehicles, two GCS, and one RSTA kit.

RQ-20 Puma (Block 2) - Puma is an all environment UAS with a wingspan of 9.2 feet, weight of 13 pounds and endurance of 2.5 hours. The PUMA has demonstrated ranges up to 28 kilometers. The standard payload consists of a gimbaled turret with an EO/IR sensor. A Signals Intelligence payload is also available. The PUMA provides an organic, persistent ISR capability to battalion level units. Additionally, it has been used extensively by Route Clearance Platoons (RCP) and Combat Logistics Patrols (CLP) to enhance force protection and detect Improvised Explosive Devices (IEDs). A Puma system consists of two air vehicles, two GCSs, and one RSTA kit.

Long Endurance Small UAS - LE SUAS is an organic Group 1-2 UAS operated and maintained by a ground or similar tactical unit. It includes Vertical Take Off and Landing (VTOL) kit capability, quiet electric motor/hybrid fuel cell technology, high definition electro optic/infrared/laser (marker or designator) payload, and long range antenna kit. The air vehicle travels at an altitude of about 500-1000 feet about ground level at an approximate speed of 35 knots with an endurance of greater than eight hours with a fuel cell, and four hours with battery. It can be launched with an optional VTOL kit or with a launcher system. Mission sets include real-time full motion video for airborne intelligence, surveillance, reconnaissance (AISR), force protection, targeting, pattern of life observation, high value target tracking, control of indirect fires, full motion video to support target analysis, target package development, counter small UAS, spectrum operations (e.g. SIGINT/Cyber/EW) and communications relay/

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extension. A system consists of three air vehicles, one ground control station, and associated equipment. Additionally, this system and similar organic small UAS require system modifications and integration to adapt for Field User Evaluations (FUE).

Increase in FY 2018 from FY 2017 of $1.604M is due to increased integration and test requirements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Product Development and Support	0.635	0.418	1.106	0.000	1.106
Articles:	-	-	-	-	-
Description: The $0.688M increase from FY17 to FY18 is due to laser marker development occurring in FY18 and increased development requirements for continuing efforts. ***FY 2016 Accomplishments:*** -Continued Single Operator Man-Portable Ground Control Station (SOMGCS) development and integration with Killswitch, common software and hardware solution. -Completed assessment of rapid charging capabilities. -Initiated development and integration of Mobile Ad hoc Networks communication relay (MANET). -Initiated development and integration of electronic warfare capability (SIGINT) kit. -Initiated initial assessment of laser marker. ***FY 2017 Plans:*** -Continue SOMGCS development and transition to production. -Continue development and integration of Mobile Ad hoc Networks communication relay (MANET). -Continue integration electronic warfare capability (SIGINT) kit. -Initiate and complete operational assessment of SOMGCS. ***FY 2018 Base Plans:*** -Complete integration of electronic warfare capability (SIGINT) kit, laser marker, and Mobile Ad hoc Networks communication relay (MANET). -Initiate software development for SOMGCS to improve digital interoperability ***FY 2018 OCO Plans:*** N/A					
Title: Test and Evaluation (Operational Assessment)	0.000	0.000	0.916	0.000	0.916
Articles:	-	-	-	-	-
Description: The $0.916M increase in funding from FY17 to FY18 is due test and evaluation efforts starting that did not occur in FY17.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
FY 2016 Accomplishments: N/A ***FY 2017 Plans:*** N/A ***FY 2018 Base Plans:*** -Initiate operational assessment of MANET, and Laser Marker. -Initiate assessment of low cost, commercial available Unmanned Aerial Systems to inform future procurements, and determine potential adversary capabilities. -Change in funding from FY17 to FY18 is due test and evaluation efforts starting that did not occur in FY17. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.635	0.418	2.022	0.000	2.022

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• PMC/4757: *RQ-11 UAV*	13.430	19.293	10.154	-	10.154	2.757	2.868	2.977	3.002	Continuing	Continuing

Remarks

D. Acquisition Strategy

The program office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with incremental developments to meet the final desired Small Unit Remote Scouting System (SURSS) requirements (Joint USMC/USA/SOCOM capabilities). The next increment will involve an evolution to a Group 1-2 (Family of System) individually capable of executing requirements for long, medium and short range missions in fulfillment of the SURSS requirement. A comprehensive review of service small UAS needs is being conducted to update current requirements documents.

E. Performance Metrics

Successful operational test of MANET, SIGINT and Laser Marker payloads.
Successful operational test of SOMGCS.
Fielding of the SOMGCS, MANET, SIGINT and Laser Marker payloads in accordance with planned schedule.
Fielding of remaining RQ-20 PUMA systems in accordance with planned schedule.
Demonstrated improvements in Digital Interoperability.