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 0305232M *I RQ-11 UAV*

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	3.442	0.000	2.022	0.524	-	0.524	0.509	0.522	0.536	0.558	Continuing	Continuing
2292: *Unmanned Air Systems (Intel)*	3.442	0.000	2.022	0.524	-	0.524	0.509	0.522	0.536	0.558	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 capabilities 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	0.418	2.022	0.535	-	0.535
Current President's Budget	0.000	2.022	0.524	-	0.524
Total Adjustments	-0.418	0.000	-0.011	-	-0.011
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	-0.011	-	-0.011
• Congressional Directed Reductions Adjustments	-0.418	-	-	-	-

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 0305232M *I RQ-11 UAV*

Change Summary Explanation

Program Element change to Small UAS formally known as RQ-11 as the budget docs pertains to the entire PoR family of systems.

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 0305232M / *RQ-11 UAV*				Project (Number/Name) 2292 / *Unmanned Air Systems (Intel)*			
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**
2292: *Unmanned Air Systems (Intel)*	3.442	0.000	2.022	0.524	-	0.524	0.509	0.522	0.536	0.558	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/

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 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *Unmanned Air Systems (Intel)*

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).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Product Development and Support	0.000	1.106	0.256	0.000	0.256
Articles:	-	-	-	-	-
FY 2018 Plans: -Continue SOMGCS/THS development and transition to production. -Continue development and integration of Mobile Ad hoc Networks communication relay (MANET). -Continue development of SIGINT.					
FY 2019 Base Plans: -Continue and complete integration of electronic warfare capability (SIGINT) kit, laser marker, and Mobile Ad hoc Networks communication relay (MANET). -Initiate software development for SOMGCS/THS to improve digital interoperability.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: The overall decrease of the project from FY18 to FY19 of .850M is due to a reduction of integration and assessment requirements for SOMGCS, Laser Marker, and MANET.					
Title: Test and Evaluation (Operational Assessment)	0.000	0.916	0.268	0.000	0.268
Articles:	-	-	-	-	-
FY 2018 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. -Initiate operational assessment of SOMGCS.					
FY 2019 Base Plans: -Continue operational assessment of MANET, and Laser Marker. -Continue assessment of low cost, commercial available Unmanned Aerial Systems to inform future procurements, and determine potential adversary capabilities. -Complete operational assessment of SOMGCS.					
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 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *Unmanned Air Systems (Intel)*

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:*** The overall decrease of the project from FY18 to FY19 of .648M is due to a reduction of integration and assessment requirements for SOMGCS, Laser Marker, and MANET.					
Accomplishments/Planned Programs Subtotals	0.000	2.022	0.524	0.000	0.524

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/4757: *RQ-11 UAV*	5.793	10.154	3.848	-	3.848	34.711	39.845	30.623	21.949	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 the Next Generation service small UAS needs and requirements are being generated at CD&I 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.

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 0305232M / *RQ-11 UAV*	Project (Number/Name) 2292 / *Unmanned Air Systems (Intel)*	

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	1.342	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
SOMGCS/THS Software Integration	WR	NAWCWD : China Lake, CA	0.435	0.000	Jan 2017	0.224	Dec 2017	0.076	Dec 2018	-		0.076	Continuing	Continuing	Continuing
MANET Integration	WR	NAWCAD : Pax River, MD	0.450	0.000	Jan 2017	0.361	Dec 2017	0.085	Dec 2018	-		0.085	Continuing	Continuing	Continuing
Laser Marker Integration	WR	NAWCAD : Pax River, MD	0.000	0.000		0.362	Dec 2017	0.095	Dec 2018	-		0.095	Continuing	Continuing	Continuing
		Subtotal	2.227	0.000		0.947		0.256		-		0.256	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
Engineering Analysis	WR	NAWCAD : Pax River, MD	1.215	0.000	Nov 2016	0.159	Nov 2017	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	1.215	0.000		0.159		0.000		-		0.000	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

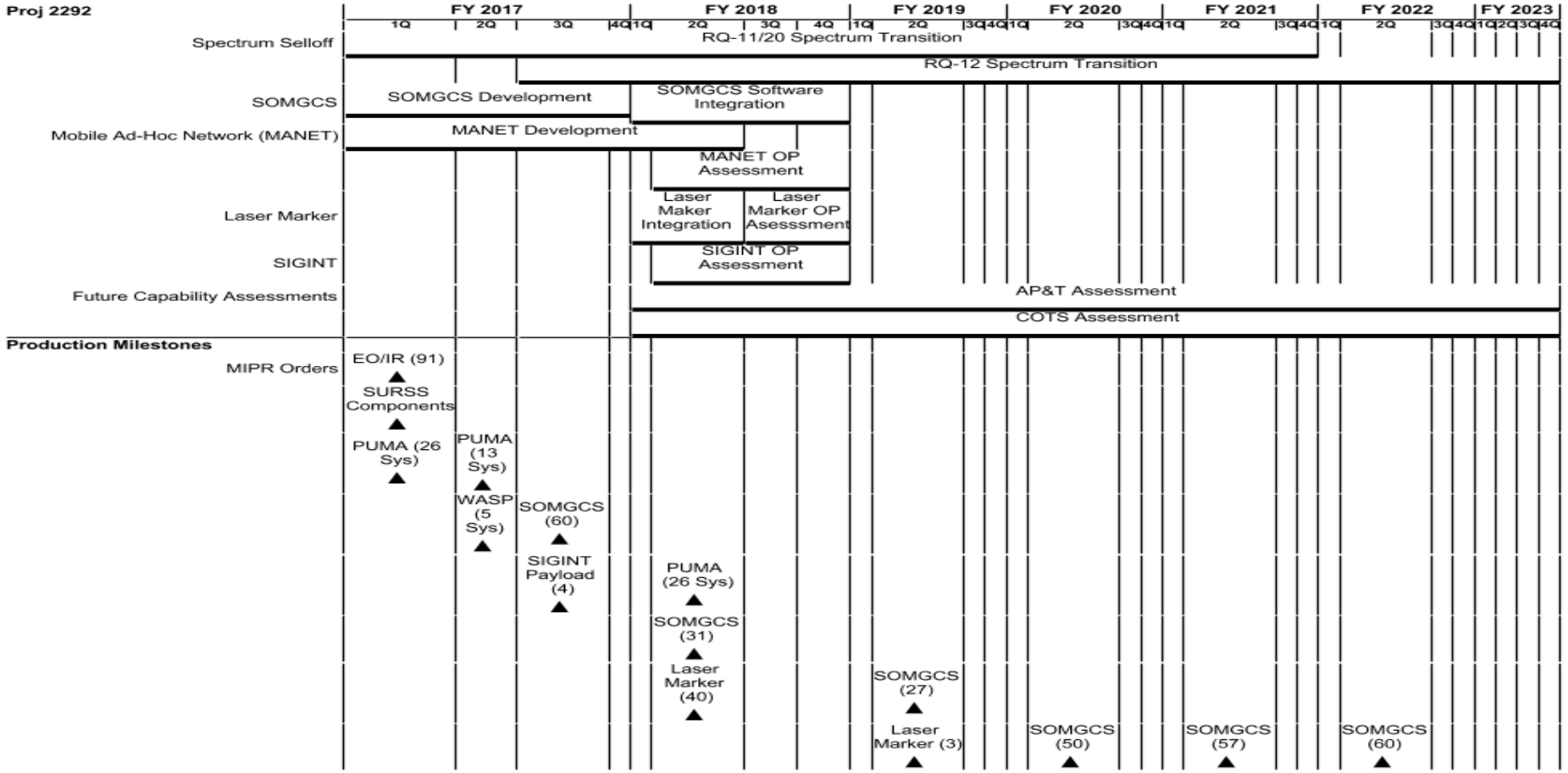
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
COTS UAS Analysis	WR	NAWCAD : Pax River, MD	0.000	0.000		0.250	Jan 2018	0.000		-		0.000	0.000	0.250	-
SOMGCS/THS Operational Assessment	WR	NAWCAD : Pax River, MD	0.000	0.000		0.225	Jan 2018	0.083	Jan 2019	-		0.083	0.000	0.308	-
Laser Marker Operational Assessment	WR	NAWCAD : Pax River, MD	0.000	0.000		0.283	Jan 2018	0.090	Jan 2019	-		0.090	0.000	0.373	-
MANET Operational Assessment	WR	NAWCAD : Pax River, MD	0.000	0.000		0.158	Jan 2018	0.095	Jan 2019	-		0.095	0.000	0.253	-
		Subtotal	0.000	0.000		0.916		0.268		-		0.268	0.000	1.184	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 0305232M / *RQ-11 UAV*	Project (Number/Name) 2292 / *Unmanned Air Systems (Intel)*	

	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	3.442	0.000		2.022		0.524		-		0.524	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 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *Unmanned Air Systems (Intel)*



2019OSD - 0305232M - 2292

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 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *Unmanned Air Systems (Intel)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2292				
Spectrum Selloff: Army Led RQ-11/RQ-20 Spectrum Transition	1	2017	4	2021
Spectrum Selloff: Marine Corps Led RQ-12 Spectrum Transition	3	2017	4	2023
SOMGCS: SOMGCS/THS Development	1	2017	4	2017
SOMGCS: SOMGCS/THS Software Integration	1	2018	4	2018
Mobile Ad-Hoc Network (MANET): MANET Development	1	2017	2	2018
Mobile Ad-Hoc Network (MANET): MANET Operational Assessment	2	2018	4	2018
Laser Marker: Laser Marker Integration Verification	1	2018	2	2018
Laser Marker: AV Commercial Laser Marker Operational Assessment	3	2018	4	2018
SIGINT: Signals Operational Asssessment	2	2018	4	2018
Future Capability Assessments: Advanced Payload and Technology Assessment	1	2018	4	2023
Future Capability Assessments: Low Cost COTS Assessment and 3rd Party Parts Qualifications	1	2018	4	2023
Production Milestones: MIPR Orders: FY15 EO/IR	1	2017	1	2017
Production Milestones: MIPR Orders: FY16 SURSS Components	1	2017	1	2017
Production Milestones: MIPR Orders: FY16 PUMA	1	2017	1	2017
Production Milestones: MIPR Orders: FY17 PUMA	2	2017	2	2017
Production Milestones: MIPR Orders: FY17 WASP	2	2017	2	2017
Production Milestones: MIPR Orders: FY17 SOMGCS	3	2017	3	2017
Production Milestones: MIPR Orders: FY17 SIGINT Payloads	3	2017	3	2017
Production Milestones: MIPR Orders: FY18 PUMA	2	2018	2	2018
Production Milestones: MIPR Orders: FY18 SOMGCS	2	2018	2	2018
Production Milestones: MIPR Orders: FY18 Laser Marker	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 0305232M / *RQ-11 UAV*	**Project (Number/Name)** *2292 / Unmanned Air Systems (Intel)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: MIPR Orders: FY19 SOMGCS/THS	2	2019	2	2019
Production Milestones: MIPR Orders: FY19 Laser Marker	2	2019	2	2019
Production Milestones: MIPR Orders: FY20 SOMGCS/THS	2	2020	2	2020
Production Milestones: MIPR Orders: FY21 SOMGCS/THS	2	2021	2	2021
Production Milestones: MIPR Orders: FY22 SOMGCS/THS	2	2022	2	2022