Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy											Date: March 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	3.442	2.002	0.524	0.509	-	0.509	0.522	0.536	0.558	0.569	Continuing	Continuing
2292: *Unmanned Air Systems (Intel)*	3.442	2.002	0.524	0.509	-	0.509	0.522	0.536	0.558	0.569	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. They continue to be planned as the current solutions for Group 1 and Group 2 capability needs while both Navy and Marine Corps finalize the transition of revised requirements to address Intelligence, Surveillance, and Reconnaissance (AISR) Capability Set via a new Capability Development Document (CDD), the intended successor to the current ORD. The new CDD shall incorporate unique mission kits, mission payloads, air vehicle enhancements, and modifications of UAS and related ground control stations for the family of Group 1 tactical UAS systems including Group 1 Short Range/Short Endurance (SR/SE), Group 1 Medium Range/Medium Endurance (MR/ME), and Group1/Group 2 Long Range/Long Endurance (LR/LE). 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 integrate with the Target Handoff System (THS) to improve portability and digital interoperability. SOMGCS/THS provides enhanced opportunities to detect irregular and asymmetric threats in a variety of domains, to include urban domains, providing the warfighter with enhanced situational awareness and understanding. SOMGCS/THS reduces the size, weight, and man power required to operate a SURSS GCS, increases the mobility of the operator, and improves digital interoperability. SOMGCS/THS is fully mobile and can be attached to the operator while the fielded GCS requires setup at a static location. Mobile ad-hoc network (MANET) communication relay, laser marker, and Signals Intelligence (SIGINT) 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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy					Date: March 2019
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*			
B. Program Change Summary ($ in Millions)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
Previous President's Budget	2.022	0.524	0.509	-	0.509
Current President's Budget	2.002	0.524	0.509	-	0.509
Total Adjustments	-0.020	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.020	0.000			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Change Summary Explanation

The FY 2020 funding request was reduced by $0.509 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
2292: *Unmanned Air Systems (Intel)*	3.442	2.002	0.524	0.509	-	0.509	0.522	0.536	0.558	0.569	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Small Unit Remote Scouting System (SURSS) - The SURSS program procures unmanned aircraft systems (UAS) to provide battalion/company/detachment level units with scalable Airborne Intelligence, Surveillance and Reconnaissance (AISR) capabilities to aid in detecting, identifying, engaging, and/or avoiding enemy units. Currently procured RQ-12 Wasp, RQ-11 Raven, RQ-20 Puma and various Nano/Vertical Takeoff & Landing (VTOL) UASs meet validated operational requirements delineated in the Operational Requirements Document (ORD). They continue to be planned as the current solutions for Group 1 and Group 2 capability needs while both Navy and Marine Corps finalize the transition of revised requirements to address the AISR capability set via a new Capability Development Document (CDD) with the intended successor to the current ORD. The new CDD shall incorporate unique mission kits, mission payloads, air vehicle enhancements, and modifications of UAS and related ground control stations for the family of Group 1 tactical UAS systems including Group 1 Short Range/Short Endurance (SR/SE), Group 1 Medium Range/ Medium Endurance (MR/ME), and Group1/Group 2 Long Range/Long Endurance (LR/LE). Group 1 UAS are small systems, less than 20 pounds in weight and Group 2 are medium systems, between 21 pounds and 55 pounds in weight.

The SURSS program also conducts Field User Evaluations (FUEs) to support Universal Urgent Needs Statements (UUNS) that inform future USMC system procurement the most current technology available. A Single Operator Man-Portable Ground Control System (GCS) / Target Handoff System(SOMGCS/THS) capability provides enhanced opportunities to detect irregular and asymmetric threats in a variety of domains, to include urban domains, providing the warfighter with enhanced situational awareness and understanding. A SOMGCS/THS capability reduces the size, weight, and manpower required to operate a SURSS GCS, increases the mobility of the operator, and improves digital interoperability. A SOMGCS/THS capability shall be fully mobile and can be attached to the operator while the fielded GCS requires setup at a static location.

SR/SE capabilities are transitioning with revised requirements vice the existing ORD (Block 0) requirements to a next generation capability: Existing ORD (Block 0) capabilities are satisfied by the RQ-12A Wasp UAS. 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. SR/SE (ORD Block 0) assets reduce the request-to-response timeframe for ISR services by eliminating delays or denials for ISR coverage due to an imbalance of other UAS assets that might otherwise be available.

MR/ME capabilities are transitioning with revised requirements vice the existing ORD (Block 1) requirements to a next generation capability: Existing ORD (Block 1) capabilities are satisfied by the RQ-11B Raven UAS. Raven is a small UAS with a wingspan of 4.6 feet, weight of 5 pounds and endurance of 90 minutes. Raven employs a gimbaled EO/IR sensor. Raven provides the company level unit an organic, near-real-time ISR capability that facilitates rapid battlefield decision making.

LR/LE capabilities are transitioning with revised requirements vice the existing ORD (Block 2) requirements to a next generation capability. Existing ORD (Block 2) capabilities are satisfied by the RQ-20B Puma UAS. Puma is an all environment UAS with a wingspan of 9.2 feet, weight of 13 pounds and endurance of 2.5 hours. The

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *Unmanned Air Systems (Intel)*

Puma has demonstrated ranges of up to 28 kilometers. The standard payload consists of a gimbaled turret with an EO/IR sensor; a Signals Intelligence payload is also available. Puma provides an organic, persistent ISR capability to battalion level units, Route Clearance Platoons (RCP) and Combat Logistics Patrols (CLP) to enhance force protection and detect Improvised Explosive Devices (IEDs).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Product Development and Support	1.086	0.256	0.259	0.000	0.259
Articles:	-	-	-	-	-
FY 2019 Plans: -Continue and complete integration of electronic warfare capability (SIGINT) kit, laser marker, and Mobile Ad hoc Networks communication relay (MANET) with RQ-20 PUMA. -Initiate software development for SOMGCS/THS to improve digital interoperability with RQ-20 PUMA.					
FY 2020 Base Plans: -Initiate integration of electronic warfare capability (SIGINT) kit, laser marker, and Mobile Ad hoc Networks communication relay (MANET). -Complete software development for SOMGCS/THS to improve digital interoperability with RQ-20 PUMA.					
FY 2020 OCO Plans: N/A					
FY 2019 to FY 2020 Increase/Decrease Statement: No significant change.					
Title: Test and Evaluation (Operational Assessment)	0.916	0.268	0.250	0.000	0.250
Articles:	-	-	-	-	-
FY 2019 Plans: -Continue operational assessment of MANET, and Laser Marker for RQ-20 PUMA. -Continue assessment of low cost, commercial available Unmanned Aerial Systems to inform future procurements, and determine potential adversary capabilities. -Complete operational assessment of SOMGCS for RQ-20 PUMA.					
FY 2020 Base Plans: -Continue operational assessment of MANET, and Laser Marker for future platforms. -Continue assessment of low cost, commercial available Unmanned Aerial Systems to inform future procurements, and determine potential adversary capabilities.					
FY 2020 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The FY2020 funding request was decreased by $0.018M due to SOMGCS effort completing in FY19.					
Accomplishments/Planned Programs Subtotals	2.002	0.524	0.509	0.000	0.509

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• PMC/4757: *RQ-11 UAV*	10.154	3.848	34.711	-	34.711	39.845	30.623	18.449	19.353	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 and the transition to the capability set as determined to meet the Next Generation requirements. 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.
Demonstrated improvements in Digital Interoperability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 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	0.000	1.342	-
SOMGCS/THS Software Integration	WR	NAWCWD : China Lake, CA	0.435	0.224	Dec 2017	0.076	Dec 2018	0.075	Dec 2019	-		0.075	Continuing	Continuing	Continuing
MANET Integration	WR	NAWCAD : Pax River, MD	0.450	0.361	Dec 2017	0.085	Dec 2018	0.089	Dec 2019	-		0.089	Continuing	Continuing	Continuing
Laser Marker Integration	WR	NAWCAD : Pax River, MD	0.000	0.362	Dec 2017	0.095	Dec 2018	0.095	Dec 2019	-		0.095	Continuing	Continuing	Continuing
		Subtotal	2.227	0.947		0.256		0.259		-		0.259	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Analysis	WR	NAWCAD : Pax River, MD	1.215	0.139	Nov 2017	0.000		0.000		-		0.000	0.000	1.354	-
		Subtotal	1.215	0.139		0.000		0.000		-		0.000	0.000	1.354	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
COTS UAS Analysis	WR	NAWCAD : Pax River, MD	0.000	0.250	Jan 2018	0.000		0.000		-		0.000	0.000	0.250	-
SOMGCS/THS Operational Assessment	WR	NAWCAD : Pax River, MD	0.000	0.225	Jan 2018	0.083	Jan 2019	0.080	Jan 2020	-		0.080	0.000	0.388	-
Laser Marker Operational Assessment	WR	NAWCAD : Pax River, MD	0.000	0.283	Jan 2018	0.090	Jan 2019	0.085	Jan 2020	-		0.085	0.000	0.458	-
MANET Operational Assessment	WR	NAWCAD : Pax River, MD	0.000	0.158	Jan 2018	0.095	Jan 2019	0.085	Jan 2020	-		0.085	0.000	0.338	-
		Subtotal	0.000	0.916		0.268		0.250		-		0.250	0.000	1.434	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.442	2.002		0.524		0.509		-		0.509	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *Unmanned Air Systems (Intel)*

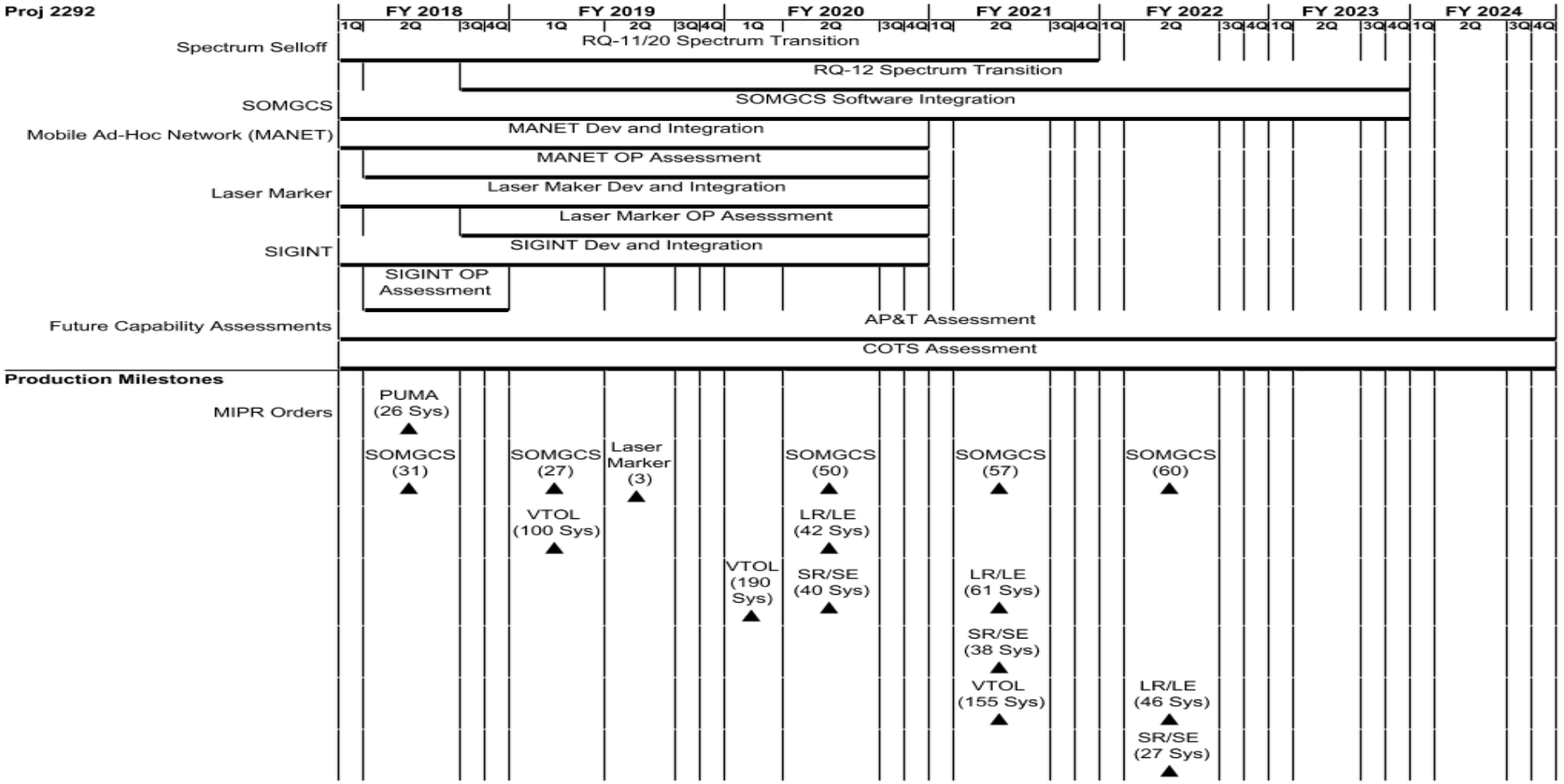

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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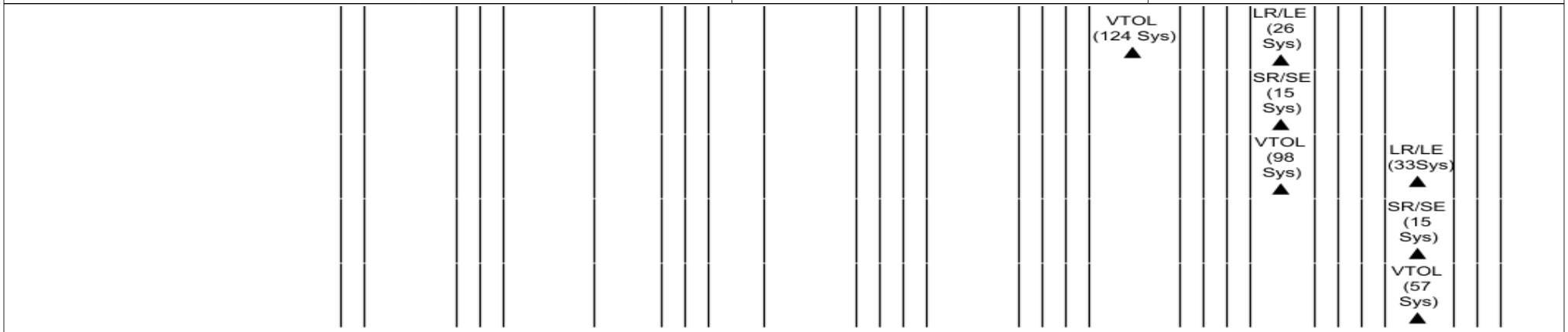

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *Unmanned Air Systems (Intel)*

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	2018	4	2021
Spectrum Selloff: Marine Corps Led RQ-12 Spectrum Transition	3	2018	4	2023
SOMGCS: SOMGCS/THS Software Integration	1	2018	4	2023
Mobile Ad-Hoc Network (MANET): MANET Development and Integration	1	2018	4	2020
Mobile Ad-Hoc Network (MANET): MANET Operational Assessment	2	2018	4	2020
Laser Marker: Laser Marker Development and Integration Verification	1	2018	4	2020
Laser Marker: AV Commercial Laser Marker Operational Assessment	3	2018	4	2020
SIGINT: SIGINT Development and Integration	1	2018	4	2020
SIGINT: Signals Operational Asssessment	2	2018	4	2018
Future Capability Assessments: Advanced Payload and Technology Assessment	1	2018	4	2024
Future Capability Assessments: Low Cost COTS Assessment	1	2018	4	2024
Production Milestones: MIPR Orders: FY18 PUMA	2	2018	2	2018
Production Milestones: MIPR Orders: FY18 SOMGCS	2	2018	2	2018
Production Milestones: MIPR Orders: FY19 SOMGCS/THS	1	2019	1	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
Production Milestones: MIPR Orders: FY19 VTOL	1	2019	1	2019
Production Milestones: MIPR Orders: FY20 LR/LE	2	2020	2	2020
Production Milestones: MIPR Orders: FY20 SR/SE	2	2020	2	2020
Production Milestones: MIPR Orders: FY20 VTOL	1	2020	1	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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: FY21 LR/LE	2	2021	2	2021
Production Milestones: MIPR Orders: FY21 SR/SE	2	2021	2	2021
Production Milestones: MIPR Orders: FY21 VTOL	2	2021	2	2021
Production Milestones: MIPR Orders: FY22 LR/LE	2	2022	2	2022
Production Milestones: MIPR Orders: FY22 SR/SE	2	2022	2	2022
Production Milestones: MIPR Orders: FY22 VTOL	2	2022	2	2022
Production Milestones: MIPR Orders: FY23 LR/LE	2	2023	2	2023
Production Milestones: MIPR Orders: FY23 SR/SE	2	2023	2	2023
Production Milestones: MIPR Orders: FY23 VTOL	2	2023	2	2023
Production Milestones: MIPR Orders: FY24 LR/LE	2	2024	2	2024
Production Milestones: MIPR Orders: FY24 SR/SE	2	2024	2	2024
Production Milestones: MIPR Orders: FY24 VTOL	2	2024	2	2024