

# UNCLASSIFIED

**Exhibit R-2, RDT&E Budget Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy I BA 7: Operational Systems Development</i>					<b>R-1 Program Element (Number/Name)</b> PE 0305205N I (U)UAS <i>Integration and Interoperability</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	0.000	42.202	36.509	39.736	-	39.736	17.547	11.184	11.426	11.645	Continuing	Continuing
3379: <i>Common Control System</i>	0.000	42.202	36.509	39.736	-	39.736	17.547	11.184	11.426	11.645	Continuing	Continuing

## **Note**

The Common Control System (CCS) was budgeted in PE 0604404N: Unman Carrier Launch A/B Surv & Strike (UCLASS) Sys prior to FY16. In FY16, the UCLASS program transitioned to MQ-25 Stingray. CCS Increment I development began 3Q2013.

## **A. Mission Description and Budget Item Justification**

This PE funds the Unmanned Systems (UxSs) Common Control System (CCS). The primary mission of CCS is to provide common control across the Navy's UxS portfolio to add scalable and adaptable warfighting capability, implement robust cybersecurity attributes, leverage existing government owned products, eliminate redundant software development efforts, consolidate product support, encourage innovation, improve cost control, and enable rapid integration of UxS capabilities across all domains: Aviation, Surface, Sub-Surface, and Ground.

This program will define, develop, and deliver CCS capability that enables the flexibility for Ground Control Systems (GCS) that could be ship, shore, airborne, or expeditionary based to operate multiple and dissimilar Naval UxSs. CCS includes a common framework, user interface, and common components that will also be integrated and tested with legacy platform components. CCS is being developed with an open and modular business model with robust cybersecurity implementation and will be provided as Government Furnished Equipment (GFE) to UxS contractors as required. The CCS acquisition approach is to provide increasing UxS capability through incremental development for UxS platforms as follows:

Increment I will provide initial Unmanned Air System (UAS) vehicle control functionality for MQ-25 Stingray launch & recovery, maneuvering & stationing, situational awareness, and health & performance status with a common CCS Vehicle Management (VM) capability integrated with legacy platform Mission Management/Mission Planning (MM/MP) capabilities hosted on legacy platform hardware. Other UAS platforms for follow-on CCS transition include MQ-4 Triton and MQ-8 Fire Scout. Efforts will include exploring opportunities for other UxS platforms from across all domains to benefit from CCS development.

Increment II will maintain and update, as necessary, the core Increment I VM baseline and add common MM/MP capabilities hosted on legacy platform hardware. Additionally, Increment II adds robust cybersecurity controls, key systems safety attributes, and core program infrastructure to include a system integration lab and software support activities (SSA).

Increment III aligns Common Control software and hardware for the Naval UxS control segment.

CCS will be a ship/shore/airborne/expeditionary based common control segment that provides VM and MM/MP capabilities for Naval Group 2 through 5 Unmanned Aerial Vehicles (UAVs) and other domain UxS's. The CCS will provide open software architecture, based on the OSD Unmanned Control Segment (UCS) architecture, that is scalable to evolving Service requirements and is supportive of safety/airworthiness certification and cybersecurity certification and accreditation.

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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy			Date: May 2017			
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0305205N I (U)UAS Integration and Interoperability				
The CCS PU funds two Speed-to-the-Fleet capability initiatives: 1) Full Motion Video (FMV) for Geo-intelligence Unified Naval Streaming System (GUNSS) and 2) Moving Target Indicator (MTI) for Broad Area Maritime Surveillance - Demonstrator (BAMS-D).						
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.						
B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget		41.831	36.509	20.473	-	20.473
Current President's Budget		42.202	36.509	39.736	-	39.736
Total Adjustments		0.371	0.000	19.263	-	19.263
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		1.200	0.000			
• SBIR/STTR Transfer		-0.829	0.000			
• Program Adjustments		0.000	0.000	19.100	-	19.100
• Rate/Misc Adjustments		0.000	0.000	0.163	-	0.163
Change Summary Explanation						
Program Adjustment of \$19.1M in FY18 to align CCS capability delivery with the MQ-25 schedule.						
MQ-25 Stingray, MQ-4 Triton and MQ-8 Fire Scout nomenclature standardized throughout entire budget exhibit.						

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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 0305205N / (U)UAS Integration and Interoperability				Project (Number/Name) 3379 / Common Control System			
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
3379: Common Control System	0.000	42.202	36.509	39.736	-	39.736	17.547	11.184	11.426	11.645	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

## Note

The Common Control System was budgeted in PE 0604404N: Unman Carrier Launch A/B Surv & Strike (UCLASS) Sys prior to FY16. The Common Control System (CCS) was budgeted in PE 0604404N: Unman Carrier Launch A/B Surv & Strike (UCLASS) Sys prior to FY16. In FY16, the UCLASS program transitioned to MQ-25 Stingray.

## A. Mission Description and Budget Item Justification

This PE funds the Unmanned System (UxS) Common Control System (CCS). The primary mission of CCS is to provide common control across the Navy's UxS portfolio to add scalable and adaptable warfighting capability, implement robust cybersecurity attributes, leverage existing government owned products, eliminate redundant software development efforts, consolidate product support, encourage innovation, improve cost control, and enable rapid integration of UxS capabilities across all domains: Aviation, Surface, Sub-Surface, and Ground.

This program will define, develop and deliver CCS capability that enables the flexibility for Ground Control Systems (GCS) that could be ship, shore, airborne, or expeditionary based to operate multiple and dissimilar Naval (UxSs). CCS includes a common framework, user interface, and common components that will also be integrated and tested with legacy platform components. CCS is being developed with an open and modular business model with robust cybersecurity implementation and will be provided as Government Furnished Equipment (GFE) to UxS Contractors as required. In alignment with the Office of the Chief of Naval Operations Directorate for Air Warfare Systems (OPNAV N98), the CCS acquisition approach is to provide increasing UxS capability through incremental development for UxS platforms as follows:

Increment I will provide initial Unmanned Aerial System (UAS) vehicle control functionality for MQ-25 Stingray launch & recovery, maneuvering & stationing, situational awareness, and health & performance status with a common Vehicle Management (VM) capability using legacy platform Mission Management/Mission Planning (MM/MP) capabilities hosted on legacy platform hardware. Other UAS platforms for follow-on CCS transition include MQ-4 Triton and MQ-8 Fire Scout. Efforts will include exploring opportunities for other UxS platforms from across all domains to benefit from CCS invested developments.

Increment II will maintain and update, as necessary, the core VM baseline and add common MM/MP capabilities hosted on legacy platform hardware. Additionally, Increment II adds robust cybersecurity measures, key systems safety attributes, and core program infrastructure to include system integration lab and software support activities.

Increment III aligns Common Control software and hardware for the Naval UxS control segment.

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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 0305205N / (U)UAS Integration and Interoperability	Project (Number/Name) 3379 / Common Control System				
CCS will be a ship/shore/airborne/expeditionary based common control segment that provides VM and MM/MP capabilities for Naval Group 2 through 5 Unmanned Aerial Vehicles (UAVs) and other domain UxS's. The CCS will provide open software architecture, based on the OSD Unmanned Control Segment (UCS) architecture, that is scalable to evolving Service requirements and is supportive of safety/airworthiness certification and cybersecurity certification and accreditation.							
The CCS PU funds two Speed-to-the-Fleet capability initiatives: 1) Full Motion Video (FMV) for Geo-intelligence Unified Naval Streaming System (GUNSS) and 2) Moving Target Indicator (MTI) for Broad Area Maritime Surveillance - Demonstrator (BAMS-D).							
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Increment I			34.331	17.400	16.946	0.000	16.946
Articles:			-	-	-	-	-
Description: Common Control System (CCS) Increment I provides MQ-25 Stingray Unmanned Air System (UAS) Vehicle Management (VM) with legacy platform Mission Management/Planning (MM/MP) capability hosted on legacy platform hardware. Other UAS platforms for follow-on CCS transition include MQ-4 Triton and MQ-8 Fire Scout.							
FY 2016 Accomplishments: FY16 accomplishments include the continuation of CCS Increment 1 Vehicle Management software development, integration, and test. Additional accomplishments include CCS Increment 1 Build 2 software delivery software delivery for installation into the MQ-25A lab and a Large Displacement Unmanned Undersea Vehicle (LDUUV) limited extensibility demonstration. Efforts ensured that maximum commonality and applicability was maintained for continued transition of other UxSs.							
FY 2017 Plans: Development of CCS VM capability will continue in FY17 and will include initial CCS VM build delivery to MQ-25A to support the MQ-25A development and will also include initial CCS VM engineering build releases to support risk reduction for Triton and Fire Scout VM transition. FY17 plans include requirements and architecture identification, definition, and analysis of surface, sub-surface, and ground UxS.							
FY 2018 Base Plans: Development of CCS VM capability will continue in FY18 and includes support for accelerated MQ-25 Stingray capability delivery, CCS VM build delivery to MQ-8 Fire Scout, and includes initial CCS VM engineering							

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Appropriation/Budget Activity 1319 / 7		R-1 Program Element (Number/Name) PE 0305205N / (U)UAS Integration and Interoperability		Project (Number/Name) 3379 / Common Control System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
activities to support risk reduction for MQ-4 Triton. Increment I Vehicle Management capabilities and common requirements definition, analysis, and development may be initiated in FY18 for other UxS target platforms.						
FY 2018 OCO Plans: N/A						
Title: Increment II		7.871	19.109	22.790	0.000	22.790
Articles:		-	-	-	-	-
Description: CCS Increment II will maintain and update as necessary the core Vehicle Management (VM) baseline and will add common Mission Management/Mission Planning (MM/MP) capability hosted on legacy platform hardware. CCS Increment II will be the future MM/MP baseline for MQ-25 Stingray. Plans include ensuring that maximum commonality is maintained for transition to MQ-4 Triton, MQ-8 Fire Scout, and other UxS. Increment II incorporates cybersecurity measures, key systems safety attributes, and core program infrastructure to include system integration lab and software support activities.						
FY 2016 Accomplishments: FY16 accomplishments included requirements identification, definition, analysis, UxS trade studies, and initiation of accelerated development of migration plans for Triton and Fire Scout UAS platforms.						
FY 2017 Plans: In FY17 CCS Increment II will, concurrently with Increment I development, refine requirements and architecture and accelerate software development for the MM/MP core components. FY17 activities include initial CCS Increment II software build development to support MQ-25A, the development of the GUNSS and the MTI Speed-to-the-Fleet capabilities initiatives, and continuation of trade studies and requirements development for Triton and Fire Scout.						
FY 2018 Base Plans: In FY18, CCS Increment II will begin initial software development incorporating results of requirements and architecture development efforts. Increment II plans to develop and integrate cybersecurity software modules into the CCS software baseline. Increment II (Mission Planning and Mission Management) common requirements definition, analysis, and development will be initiated in FY18. Target platforms include: MQ-25 Stingray, MQ-8 Fire Scout and MQ-4 Triton but may be expanded to other UxS domains. Additionally, Increment II planning will include establishment of the Software Support Activity (SSA) for CCS.						
FY 2018 OCO Plans:						

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Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0305205N / (U)UAS Integration and Interoperability				Project (Number/Name) 3379 / Common Control System			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
				FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total			
N/A											
Accomplishments/Planned Programs Subtotals				42.202	36.509	39.736	0.000	39.736			
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
• RDTEN/0604404N: Unman Carrier Launch A/B Surv & Strk (UCLASS) Sys	414.376	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	839.182
• RDTEN/0605414N: Unmanned Carrier Aviation (UCA)	0.000	89.000	222.126	-	222.126	484.950	612.793	515.313	554.604	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
PEO(U&W) issued an Acquisition Decision Memorandum (ADM) 5000 Ser PEO(U&W)/11-093 dated July 1, 2011 to establish the Common Control System (CCS) to achieve Unmanned Aircraft System (UAS) common control across Program Executive Office Unmanned Aviation and Weapon Systems (PEO(U&W)) UAS platforms to eliminate redundant efforts, encourage innovation, and improve cost control of unmanned aviation. In coordination with the ADM, the program will define, develop and deliver a common control system to operate respective Naval Unmanned Systems (UxSs). This will include a common framework, a common user interface, and common components that will be integrated and tested with unique components on emerging or legacy platforms. The CCS acquisition approach is to provide increasing common UxS capability through incremental development for UxS platform as follows: Increment I will provide UxS Vehicle Management capability to support MQ-25 Stingray, MQ-4 Triton, and MQ-8 Fire Scout; Increment II will maintain and update as necessary the core UAS VM baseline and adds common UxS Mission Management/Mission Planning capability; Increment III aligns Common Control software and hardware for the Naval UxS control segment. CCS will be provided to the MQ-25 Stingray air vehicle prime as Government-Furnished Equipment (GFE) and also for transition into MQ-4 Triton and MQ-8 Fire Scout. CCS will leverage existing government-owned products as well as employ competitive procurement vehicles to support MQ-25 Stingray and will transition MQ-4 Triton, MQ-8 Fire Scout, and other Naval UxS across multiple domains.											
E. Performance Metrics											
CCS uses a Service-Oriented Architecture based on the OSD Unmanned Control Segment (UCS) architecture. The CCS Capability Development Document (CDD) and CONOPS will be developed in FY16-17 and will inform the Common Control requirements and Key Performance Parameters (KPPs). CCS will inherit common requirements of each supported UxS platform's CDD/CPD through the respective specification trees. CCS must therefore also support the KPPs, Measures of Suitability/ Effectiveness, Concepts of Operations, etc., flowed down from each supported platform.											

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0305205N / (U)UAS Integration and Interoperability				Project (Number/Name) 3379 / Common Control System					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development	C/CPFF	Raytheon : Dulles, VA	0.000	17.036	Apr 2016	11.141	Dec 2016	8.000	Dec 2017	-		8.000	0.000	36.177	36.177
Advanced Development	WR	NAWC-WD : China Lake, CA	0.000	2.875	Nov 2015	2.700	Nov 2016	1.000	Nov 2017	-		1.000	Continuing	Continuing	Continuing
Software Cyber Modeling	C/CPFF	JHU APL : Baltimore, MD	0.000	2.000	Nov 2015	0.000		0.000		-		0.000	0.000	2.000	2.000
Architecture Development	C/CPFF	SEI : Hanscom, MA	0.000	1.205	Apr 2016	0.000		0.000		-		0.000	0.000	1.205	1.205
Architecture Development	C/CPFF	NRL : Washington, DC	0.000	2.330	Jan 2016	0.000		0.000		-		0.000	0.000	2.330	2.330
Architecture Development	Various	Various : Various	0.000	2.461	Apr 2016	5.660	Apr 2017	1.713	Feb 2018	-		1.713	0.000	9.834	9.834
SSA - Software Integration	C/CPFF	TBD : TBD	0.000	0.000		0.000		10.400	Feb 2018	-		10.400	0.000	10.400	10.400
Subtotal			0.000	27.907		19.501		21.113		-		21.113	-	-	-
Remarks															
The FY18 SSA software integration contract supports the establishment of a CCS software support activity (SSA). This contract will be a competitive award in FY18 so the performing activity and location are currently TBD due to the competitive contracting strategy.															
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD : Pax River, MD	0.000	4.900	Nov 2015	8.395	Nov 2016	4.258	Nov 2017	-		4.258	Continuing	Continuing	Continuing
Lead Systems Engineering and Integration	WR	NAWC-WD : Pt Mugu, CA	0.000	2.545	Nov 2015	3.903	Nov 2016	0.000		-		0.000	0.000	6.448	6.448
Systems Engineering	C/CPFF	Engility : Pax River, MD	0.000	0.756	Dec 2015	0.000		0.000		-		0.000	0.000	0.756	0.756
Systems Engineering Integration Test	C/CPFF	Booz Allen : Pax River, MD	0.000	2.714	Jun 2016	0.000		0.000		-		0.000	0.000	2.714	2.714
Systems Engineering Study	C/CPFF	CNA : Alexandria, VA	0.000	0.800	Nov 2015	0.000		0.000		-		0.000	0.000	0.800	0.800
Systems Engineering	Various	Various : Various	0.000	1.100	Feb 2016	0.000		0.000		-		0.000	0.000	1.100	1.100

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
Appropriation/Budget Activity 1319 / 7						R-1 Program Element (Number/Name) PE 0305205N / (U)UAS Integration and Interoperability				Project (Number/Name) 3379 / Common Control System					
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Integration	C/CPFF	TBD : TBD	0.000	0.000		0.000		8.700	Feb 2018	-		8.700	0.000	8.700	8.700
Systems Engineering Technical Agent	C/CPFF	TBD : TBD	0.000	0.000		0.000		4.000	Feb 2018	-		4.000	0.000	4.000	4.000
Subtotal			0.000	12.815		12.298		16.958		-		16.958	-	-	-
Remarks															
The FY18 Systems Integration and Systems Engineering Technical Agent contracts will be a competitive award in FY18 so the performing activity and location are currently TBD due to the competitive contracting strategy.															
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT&E/OT	WR	NAWC-AD : Pax River, MD	0.000	0.100	Nov 2015	1.573	Nov 2016	0.800	Nov 2017	-		0.800	Continuing	Continuing	Continuing
DT&E	WR	NAWC-WD : Pt Mugu, CA	0.000	0.730	Nov 2015	1.700	Nov 2016	0.000		-		0.000	0.000	2.430	2.430
Subtotal			0.000	0.830		3.273		0.800		-		0.800	-	-	-
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NAWC-AD : Pax River, MD	0.000	0.650	Nov 2015	1.437	Nov 2016	0.865	Nov 2017	-		0.865	Continuing	Continuing	Continuing
Subtotal			0.000	0.650		1.437		0.865		-		0.865	-	-	-
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	42.202		36.509		39.736		-		39.736	-	-	-



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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy							Date: May 2017			
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0305205N / (U)UAS Integration and Interoperability			Project (Number/Name) 3379 / Common Control System			
	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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**Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy**

<b>Date:</b> May 2017
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**Appropriation/Budget Activity**  
1319 / 7

**R-1 Program Element (Number/Name)**  
PE 0305205N / (U)UAS Integration and Interoperability

<b>Project (Number/Name)</b>	3379 / <i>Common Control System</i>
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<b>Exhibit R-4A, RDT&amp;E Schedule Details: FY 2018 Navy</b>			<b>Date:</b> May 2017
<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205N / (U)UAS Integration and Interoperability	<b>Project (Number/Name)</b> 3379 / Common Control System	

**Schedule Details**

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
<b>Common Control System</b>				
Acquisition Milestones: Increment I Initial Vehicle Management (VM) Software Release	2	2017	2	2017
Acquisition Milestones: Increment II Initial Mission Management/Mission Planning (MM/MP) Software Release	3	2020	3	2020
System Development: Increment I VM Software Development	1	2016	4	2021
System Development: Increment II MM/MP Requirements/Architecture Development	1	2016	4	2018
System Development: Increment II MM/MP Software Development	4	2018	4	2021
Integration and Test: Increment I VM Software Integration and Test	1	2016	4	2022
Integration and Test: Increment II MM/MP Software Integration and Test	2	2019	4	2022