Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy											Date: February 2020	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305234N *I Small (Level 0) Tactical UAS (STUASL0)*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	83.867	5.265	9.410	8.773	-	8.773	6.039	6.420	6.242	6.367	Continuing	Continuing
3192: *RQ-21 BLACKJACK*	83.867	5.265	9.410	8.773	-	8.773	6.039	6.420	6.242	6.367	Continuing	Continuing

A. Mission Description and Budget Item Justification

The RQ-21A BLACKJACK (formerly known as The Small Tactical Unmanned Aircraft System (STUAS)) is a combined United States Navy (USN) and United States Marine Corps (USMC) program that provides persistent maritime and land-based tactical Intelligence, Surveillance, and Reconnaissance/Target Acquisition support for tactical level maneuver decisions and unit level force defense/force protection for Naval amphibious assault ships (multi-ship classes) and Navy and Marine land forces. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and provide support for Naval Units operating from sea/shore in Overseas Contingency Operations. This submission is the USNs portion of the program and has been coordinated with the USMC budget submission PE 0305239M (RQ-21A).

The RQ-21A BLACKJACK system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability and safety issues. Upgraded capabilities may include Navy Command and Control integration, Extended Range, Weapons Integration, Heavy Fuel Engine, Laser Designator, Frequency Agile Communications Relay, Digital Common Data Link, and cyclic refresh of the Electro-Optical/Infrared camera. RQ-21A BLACKJACK will continue to expand its shipboard capability across new ship classes.

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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Previous President's Budget	5.265	11.545	8.895	-	8.895
Current President's Budget	5.265	9.410	8.773	-	8.773
Total Adjustments	0.000	-2.135	-0.122	-	-0.122
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.135			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-0.157	-	-0.157
• Rate/Misc Adjustments	0.000	0.000	0.035	-	0.035

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy	Date: February 2020
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305234N *I Small (Level 0) Tactical UAS (STUASL0)*

Change Summary Explanation

The FY 2021 funding request was reduced by $0.157M to rephase 2% of Aviation RDT&E from FY21/22 to FY23.

Schedule:

- Schedule revised to provide greater detail. Acquisition Milestones, Capability Development, Systems Deliveries, and Contract Awards sections added. Follow-on Test and Evaluation periods updated to reflect Integrated and Operational Test periods.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	Project (Number/Name) 3192 / *RQ-21 BLACKJACK*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3192: *RQ-21 BLACKJACK*	83.867	5.265	9.410	8.773	-	8.773	6.039	6.420	6.242	6.367	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The RQ-21A BLACKJACK (formerly known as The Small Tactical Unmanned Aircraft System (STUAS)) is a combined United States Navy (USN) and United States Marine Corps (USMC) program that provides persistent maritime and land-based tactical Intelligence, Surveillance, and Reconnaissance/Target Acquisition support for tactical level maneuver decisions and unit level force defense/force protection for Naval amphibious assault ships (multi-ship classes) and Navy and Marine land forces. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and provide support for Naval Units operating from sea/shore in Overseas Contingency Operations. This submission is the USNs portion of the program and has been coordinated with the USMC budget submission PE 0305239M (RQ-21A).

The RQ-21A BLACKJACK system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability and safety issues. Upgraded capabilities may include Navy Command and Control integration, Weapons Integration, Extended Range, Heavy Fuel Engine, Laser Designator, Frequency Agile Communications Relay, Digital Common Data Link, new launch and recovery methods, parts durability and manufacturability, and cyclic refresh of the Electro-Optical/Infrared (EO/IR) camera. RQ-21A BLACKJACK will also continue to expand its shipboard capability across new ship classes.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Product Development/Upgrade Efforts	2.157	6.017	5.286	0.000	5.286
Articles:	-	-	-	-	-
FY 2020 Plans: The program will perform investigations, studies, and prototype efforts for a Vertical Takeoff and Landing (VTOL) capability for RQ-21A platform, which will eliminate the requirement for large and costly launch and recovery equipment and allow for expeditionary employment, not including maritime applications. Development of a VTOL kit for RQ-21A supports combat operations with the required expeditionary capability to support remote operations and maintain a minimal physical and manpower footprint. The program will improve the ability of the RQ-21A air vehicle to recover in a GPS denied environment and continue upgrades to reduce recovery damage, increase Propulsion Module Unit performance and reliability, and improved turret optics. The program will perform software development to correct deficiencies from test as well as enable additional capabilities such as VTOL and enable a block upgrade of multiple system components at a time.					
FY 2021 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
The program will perform investigations, studies, and continue prototype efforts for a Vertical Takeoff and Landing (VTOL) capability for RQ-21A platform. The program will improve the ability of the RQ-21A air vehicle to recover in a GPS denied environment and continue upgrades to reduce recovery damage, increase Propulsion Module Unit performance and reliability, improved turret optics and target acquisition capability, and decreasing the system's expeditionary footprint. The program will perform software development and trade studies to correct deficiencies from test as well as enable additional capabilities such as an improved communications suite, Extended Range and enable a block upgrade of multiple system components at a time ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease of $0.731M due to reduced VTOL development efforts as the effort finishes development and starts testing.					
Title: Engineering Support	3.108	3.393	3.487	0.000	3.487
Articles:	-	-	-	-	-
FY 2020 Plans: Continue Government Engineering Technical Support, Test and Evaluation, other Government Support, Contract Support Services, Program Management Support, and program related travel in support of correction of deficiencies and upgrade efforts. ***FY 2021 Base Plans:*** Continue Government Engineering Technical Support, Test and Evaluation, other Government Support, Contract Support Services, Program Management Support, and program related travel in support of correction of deficiencies and upgrade efforts. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase of $0.094M due to increased government test and evaluation support to support VTOL in FY21.					
Accomplishments/Planned Programs Subtotals	5.265	9.410	8.773	0.000	8.773

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• APN/0444: *STUASLO*	52.131	40.740	30.930	7.921	38.851	31.313	30.381	29.069	29.651	0.000	455.570
• RDTEN/0305239M: *(U)RQ-21A*	6.000	10.914	10.853	-	10.853	11.304	10.529	10.747	10.963	Continuing	Continuing
• APN/0598: *RQ-21 Series*	21.019	61.032	18.550	-	18.550	32.512	31.456	27.969	28.779	0.000	221.317

Remarks

D. Acquisition Strategy

The program office has utilized a competitive acquisition approach for award of the Engineering and Manufacturing Development effort to field a capability that meets threshold requirements. Low Rate Initial Production (LRIP) test article was utilized to successfully complete Initial Operational Test and Evaluation (IOT&E). LRIP continues through Future payload upgrades and development shall be competitively sourced or procured via Government Laboratories with Insitu, the prime contractor, performing integration efforts as required.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Upgrade Efforts/Correction of Deficiencies	C/BOA	Insitu, Inc : Bingen, WA	8.057	2.157	Jul 2019	6.017	Mar 2020	5.286	Mar 2021	-		5.286	Continuing	Continuing	Continuing
Prior year Prod Devt no longer funded in the FYDP	Various	Various : Various	29.125	0.000		0.000		0.000		-		0.000	0.000	29.125	-
		Subtotal	37.182	2.157		6.017		5.286		-		5.286	Continuing	Continuing	N/A

Remarks

Product development corresponds to R-2A Upgrade Efforts.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering Support	WR	NAWC-WD : China Lake, CA	13.116	1.416	Dec 2018	1.385	Dec 2019	1.413	Dec 2020	-		1.413	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWC-AD : Patuxent River, MD	13.728	0.554	Dec 2018	0.865	Dec 2019	0.901	Dec 2020	-		0.901	Continuing	Continuing	Continuing
Prior year Support no longer funded in the FYDP	Various	Various : Various	8.482	0.000		0.000		0.000		-		0.000	0.000	8.482	-
		Subtotal	35.326	1.970		2.250		2.314		-		2.314	Continuing	Continuing	N/A

Remarks

Support is included within R-2A Engineering Support.

Increased costs associated with Government Engineering Support is due to increased engineering efforts associated with the development of the VTOL capability.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	3.303	0.400	Jul 2019	0.408	Jul 2020	0.413	Jul 2021	-		0.413	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	0.307	0.040	Dec 2018	0.040	Dec 2019	0.047	Dec 2020	-		0.047	Continuing	Continuing	Continuing
		Subtotal	3.610	0.440		0.448		0.460		-		0.460	Continuing	Continuing	N/A

Remarks

Test and Evaluation is included within R-2A Engineering Support.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	MIPR	DTIC : FT. Belvoir, VA	3.137	0.235	Mar 2019	0.235	Mar 2020	0.240	Mar 2021	-		0.240	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Bowhead : Patuxent River, MD	1.814	0.415	Jan 2019	0.410	Jan 2020	0.418	Jan 2021	-		0.418	Continuing	Continuing	Continuing
Travel	WR	Various : Various	0.449	0.048	Oct 2018	0.050	Oct 2019	0.055	Oct 2020	-		0.055	Continuing	Continuing	Continuing
Prior Year Mgmt Svcs no longer funded in the FYDP	Various	Various : Various	2.349	0.000		0.000		0.000		-		0.000	0.000	2.349	Continuing
		Subtotal	7.749	0.698		0.695		0.713		-		0.713	Continuing	Continuing	N/A

Remarks

Management Services is included within R-2A Engineering Support.

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	83.867	5.265		9.410		8.773		-		8.773	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

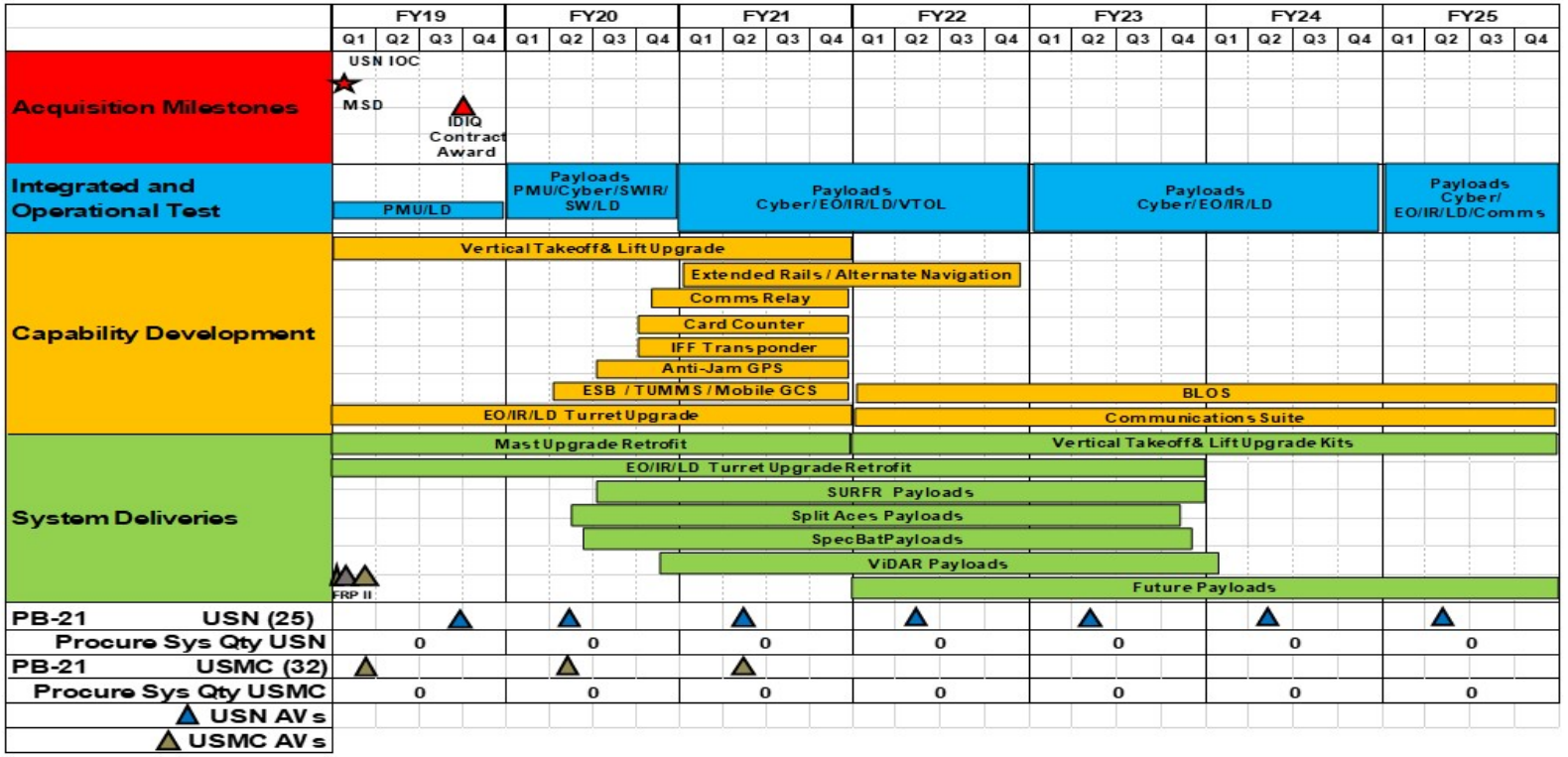

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RQ-21A				
Acquisition Milestones: USN IOC/MSD	1	2019	1	2019
Acquisition Milestones: IDIQ Contract Award	3	2019	3	2019
Integrated and Operational Test: Integrated and Operational Test - Propulsion Module Unit, Laser Designator	1	2019	4	2019
Integrated and Operational Test: Integrated and Operational Test - Propulsion Module Unit, Payloads, Laser Designator, Reliability Improvements, Cybersecurity	1	2020	4	2020
Integrated and Operational Test: Integrated and Operational Test - Payloads, Laser Designator, Cybersecurity, EO/IR, VTOL	1	2021	4	2022
Integrated and Operational Test: Integrated and Operational Test - Payloads, Laser Designator, Cybersecurity, EO/IR	1	2023	4	2024
Integrated and Operational Test: Integrated and Operational Test - Payloads, Laser Designator, Cybersecurity, EO/IR, Communication Suite	1	2025	4	2025
Capability Development: Vertical Takeoff and Lift Upgrades	1	2019	4	2021
Capability Development: Extended Rails/Alternative Navigation	1	2021	4	2022
Capability Development: Communication Relay	4	2020	4	2021
Capability Development: Card Counter	4	2020	4	2021
Capability Development: Identification Friend or Foe (IFF) Transponder	4	2020	4	2021
Capability Development: Anti-Jam GPS	3	2020	4	2021
Capability Development: Mobile Ground Control Station (GCS)	2	2020	4	2021
Capability Development: EO/IR/Laser Designator (LD) Turret Upgrade	1	2019	4	2021
Capability Development: Extended Range/Beyond Line of Sight (BLOS) Upgrade	1	2022	4	2025
Capability Development: Communication Suite	1	2022	4	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *Small (Level 0) Tactical UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Deliveries: Mast Upgrade	1	2019	4	2021
Systems Deliveries: EO/IR Laser Designator Upgrade	1	2019	4	2023
Systems Deliveries: VTOL Upgrade	1	2022	4	2025
Systems Deliveries: SURFR Payloads	3	2020	4	2023
Systems Deliveries: Split Aces Payloads	2	2020	4	2023
Systems Deliveries: SpecBat Payloads	2	2020	4	2023
Systems Deliveries: VIDAR Payloads	4	2020	1	2024
Systems Deliveries: Future Payloads	1	2022	4	2025
Systems Deliveries: System Component Air Vehicles: FY19 Contract Award - Navy (22)	3	2019	3	2019
Systems Deliveries: System Component Air Vehicles: FY20 Contract Award - Navy (10)	2	2020	2	2020
Systems Deliveries: System Component Air Vehicles: FY21 Contract Award - Navy (13)	2	2021	2	2021
Systems Deliveries: System Component Air Vehicles: FY22 Contract Award - Navy (12)	2	2022	2	2022
Systems Deliveries: System Component Air Vehicles: FY23 Contract Award - Navy (12)	2	2023	2	2023
Systems Deliveries: System Component Air Vehicles: FY24 Contract Award - Navy (12)	2	2024	2	2024
Systems Deliveries: System Component Air Vehicles: FY25 Contract Award - Navy (12)	2	2025	2	2025
Systems Deliveries: System Component Air Vehicles: FY19 Contract Award - USMC (2)	1	2019	1	2019
Systems Deliveries: System Component Air Vehicles: FY20 Contract Award - USMC (5)	2	2020	2	2020
Systems Deliveries: System Component Air Vehicles: FY21 Contract Award - USMC (5)	2	2021	2	2021