Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*							
COST ($ in Millions)	**FY 2009 Actual**	**FY 2010 Estimate**	**FY 2011 Base Estimate**	**FY 2011 OCO Estimate**	**FY 2011 Total Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	266.469	304.907	266.368	0.000	266.368	215.974	165.243	51.281	52.662	Continuing	Continuing
3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*	259.427	304.907	196.068	0.000	196.068	133.574	99.243	21.281	21.862	Continuing	Continuing
3191: *UCAS Technical Maturation*	7.042	0.000	70.300	0.000	70.300	82.400	66.000	30.000	30.800	Continuing	Continuing

A. Mission Description and Budget Item Justification

The 2005 Quadrennial Defense Review (QDR) published February 2006 and OSD AT&L EXCOM Memorandum of February 06 supported direction to restructure the Joint Unmanned Combat Air System (J-UCAS) program into a new Navy UCAS program. The Navy UCAS program will develop an unmanned, longer-range, carrier-based aircraft capable of being air-refueled to provide greater standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The Navy was directed to demonstrate carrier operations, including Autonomous Aerial Refueling (AAR), of a Low Observable (LO) Unmanned Combat Air System and to mature required technologies to a Technology Readiness Level (TRL)-6 supporting a potential follow on acquisition program.

The Navy Unmanned Combat Air System (UCAS) designed for autonomous launch and recovery as well as operations in the Carrier Control Area (CCA), is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, LO planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as primary flight control (PRI-FLY) displays, Landing Safety Officer (LSO) displays, and Carrier Air Traffic Control Center (CATCC) stations.

The Navy UCAS program will be structured to match program resources to United States Navy (USN) objectives/constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. Candidate Technology Maturation efforts include transformational communications, advanced integrated propulsion, CV suitable materials, LO sensors and apertures, sense and avoid functionality (all operating in a LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs are being developed as a result of the demonstration. Maturation of candidate technologies support the evaluation of alternatives needed for a future milestone decision and subsequent entry into Engineering and Manufacturing Development (EMD). The Navy consolidated Project 3191 into Project 3178 in FY10 and subsequently separated them in FY11. EMD funding is not covered, nor described in this exhibit.

This program element includes $.998 million for the Defense Acquisition Development Fund (DAWDF) in FY 2009.

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*

B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	274.714	311.204	0.000	0.000	0.000
Current President's Budget	266.469	304.907	266.368	0.000	266.368
Total Adjustments	-8.245	-6.297	266.368	0.000	266.368
• Congressional General Reductions		-1.270			
• Congressional Directed Reductions		-5.000			
• Congressional Rescissions	0.000	-0.027			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-8.245	0.000			
• Program Adjustments	0.000	0.000	266.368	0.000	266.368

Change Summary Explanation

Schedule: Airworthiness Testing moved from 1st QTR to 2nd QTR FY10. Sea Trials moved to 2nd QTR FY12.
The Navy consolidated Project 3191 into Project 3178 in FY10 and subsequently separated them in FY11.

Technical: Not applicable.

FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*	

COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*	259.427	304.907	196.068	0.000	196.068	133.574	99.243	21.281	21.862	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Navy Unmanned Combat Air System (UCAS), designed for autonomous launch and recovery as well as operations in the Carrier Control Area (CCA), is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, Low Observable (LO) planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as primary flight control (PRI-FLY) displays, Landing Safety Officer (LSO) displays, and Carrier Air Traffic Control Center (CATCC) stations.

The Navy consolidated Project 3191 into Project 3178 in FY10 and subsequently separated them in FY11. Navy UCAS technology maturation efforts are contained within this project for FY10.

This project unit includes $.8 million for the Defense Acquisition Development Fund (DAWDF) in FY 2009.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Product Development	243.879	285.332	173.188	0.000	173.188
The primary effort in the Navy UCAS program is design, development, integration and validation of Air Vehicle Segment, Mission Control Segment and government led Aircraft Carrier Segment leading to a Carrier demonstration of an unmanned, LO planform UCAS system, and development of internal/ external interface documents. In addition, design and development of hardware/software to support Automated Air Refueling (AAR) will be conducted. Shipboard evaluation of the Navy UCAS includes					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
integration of the Navy UCAS with shipboard systems such as PRI-FLY displays, LSO displays and CATCC stations. *FY 2009 Accomplishments:* Continued efforts in the Navy UCAS program designing, developing, integrating and validating the Navy UCAS Air Vehicle Segment, Mission Control Segment and government led Aircraft Carrier Integration Segment. Completed air vehicle 1 proof load testing, final assembly, integration and checkout. Completed systems engineering technical reviews leading to taxi testing and first flight. Continued assembly of air vehicle 2. Installation of UCAS-D shipboard components on CVN-72. Design and development of hardware/software to support Autonomous Aerial Refueling (AAR). *FY 2010 Plans:* Continue efforts in the Navy UCAS program designing, developing, integrating and validating the Navy UCAS Air Vehicle Segment, Mission Control Segment and government led Aircraft Carrier Integration Segment. Complete air vehicle 2 assembly, integration, and check out. Continue technology maturation, modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs previously included under PU 3191. Installation of UCAS-D shipboard components on Nimitz class aircraft carrier. Continue design and development of hardware/software to support AAR. *FY 2011 Base Plans:* Continue efforts in the Navy UCAS program designing, developing, integrating and validating the Navy UCAS Air Vehicle Segment, Mission Control Segment and government led Aircraft Carrier Integration Segment. Technical reviews required before sea-trials will be conducted. Installation of UCAS-D shipboard components on Nimitz class aircraft carrier. Continue design and development of hardware/software to support AAR.					
Management	10.701	10.526	11.543	0.000	11.543

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: Government management, engineering and contract support. *FY 2010 Plans:* Government management, engineering and contract support. *FY 2011 Base Plans:* Government management, engineering and contract support.					
Test and Evaluation Support *FY 2009 Accomplishments:* Completed detailed test and evaluation plan development. Completed initial test site (Edwards AFB) facility preparation. Completed air vehicle 1 ground test. *FY 2010 Plans:* Air vehicle 1 will conduct its first flight and complete airworthiness testing. Commence F/A-18D surrogate aircraft testing with CVN-72. Air vehicle 1 will transfer to NAWCAD Patuxent River, MD for further carrier suitability testing. *FY 2011 Base Plans:* Continue landbased build-up testing leading to sea-trials. Complete catapult, arresting gear, and jet blast deflector testing. Air vehicle 2 will conduct its first flight and after airworthiness envelope validation will transfer to NAWCAD Patuxent River, MD. Continue F/A-18D surrogate testing on Nimitz class aircraft carrier.	4.047	9.049	11.337	0.000	11.337
DAWDF Realignment *FY 2009 Accomplishments:* DAWDF Realignment	0.800	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	259.427	304.907	196.068	0.000	196.068

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

In the 2005 QDR, the Navy was directed to restructure the J-UCAS program and develop an unmanned, longer-range carrier-based aircraft capable of being air-refueled to provide greater (CV) standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The primary goal is risk reduction for carrier integration while developing the critical data necessary to support a potential follow on acquisition milestone decision. The Navy UCAS effort will focus on designing, developing, and evaluating the core capabilities which safely demonstrate carrier interoperability. Currently, primary hardware development for the Navy UCAS effort is being performed under a FAR-based, cost plus incentive fee-type contract competitively awarded to a single contractor.

E. Performance Metrics

Successfully complete taxi test and first flight of air vehicle 1. Complete air vehicle 2 assembly. Conduct F/A-18D surrogate aircraft testing with Nimitz class aircraft carrier.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aviation/ Ship Integration	C/CPFF	Rockwell/AFRL Rome, NY	6.385	1.200	Dec 2009	0.950	Dec 2010	0.000		0.950	0.950	9.485	9.485
Aviation/ Ship Integration	C/CPFF	L-3 Com Titan MD	6.344	1.538	Dec 2009	2.396	Dec 2010	0.000		2.396	4.898	15.176	15.176
Aviation/Ship Integration	WR	NAWCAD MD	17.098	10.917	Nov 2009	11.611	Nov 2010	0.000		11.611	0.000	39.626	Continuing
Aviation/Ship Integration	C/CPIF	TBD Various	0.000	2.142	Feb 2010	2.100	Feb 2011	0.000		2.100	1.300	5.542	5.542
Primary Hardware Development	C/CPIF	NGC CA	367.030	214.298	Nov 2009	144.464	Nov 2010	0.000		144.464	169.900	895.692	903.122
Advanced Development Eng	Various/ Various	NSMA VA	0.000	23.403	Dec 2009	0.000	Dec 2010	0.000		0.000	0.000	23.403	Continuing
Systems Engineering	WR	NAWCAD MD	11.433	9.437	Nov 2009	8.916	Nov 2010	0.000		8.916	0.000	29.786	Continuing
Product Development	Various/ Various	Various Various	69.007	2.540		2.601		0.000		2.601	0.000	74.148	Continuing
		Subtotal	477.297	265.475		173.038		0.000		173.038	177.048	1,092.858	933.325

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analyses	C/CPFF	Various Various	0.000	1.338	Feb 2010	0.000		0.000		0.000	0.000	1.338	1.338
Concept Development	WR	NAWCAD MD	0.000	7.400	Nov 2009	0.000		0.000		0.000	0.000	7.400	Continuing
Concept Development	C/CPIF	Various Various	0.000	11.000	Mar 2010	0.000		0.000		0.000	14.000	25.000	25.000
Support	Various/ Various	Various Various	1.004	0.119		0.150		0.000		0.150	0.000	1.273	Continuing
		Subtotal	1.004	19.857		0.150		0.000		0.150	14.000	35.011	26.338

Remarks

Test and Evaluation ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	MIPR	Edwards AFB CA	2.928	3.214	Nov 2009	3.333	Nov 2010	0.000		3.333	0.000	9.475	Continuing
Developmental Test & Evaluation	WR	NAWCAD MD	3.258	5.483	Nov 2009	7.633	Nov 2010	0.000		7.633	0.000	16.374	Continuing
Test & Evaluation	Various/ Various	Various Various	0.283	0.352		0.371		0.000		0.371	0.000	1.006	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

Test and Evaluation ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	6.469	9.049		11.337		0.000		11.337	0.000	26.855	

Remarks

Management Services ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor SEPM Support	C/CPIF	Various Various	10.745	3.800	Dec 2009	4.200	Dec 2010	0.000		4.200	0.000	18.745	18.745
Government Engineering Support	WR	NAWCAD MD	7.505	3.533	Nov 2009	3.604	Nov 2010	0.000		3.604	0.000	14.642	Continuing
Program Management Support	WR	NAWCAD MD	5.115	2.750	Nov 2009	3.250	Nov 2010	0.000		3.250	0.000	11.115	Continuing
Management	Various/ Various	Various Various	1.025	0.443		0.489		0.000		0.489	0.000	1.957	Continuing
DAWDF Realignment	Various/ Various	Various Various	0.800	0.000		0.000		0.000		0.000	0.000	0.800	Continuing
		Subtotal	25.190	10.526		11.543		0.000		11.543	0.000	47.259	18.745

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*	

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	509.960	304.907		196.068		0.000		196.068	191.048	1,201.983	978.408

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**PROJECT** 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

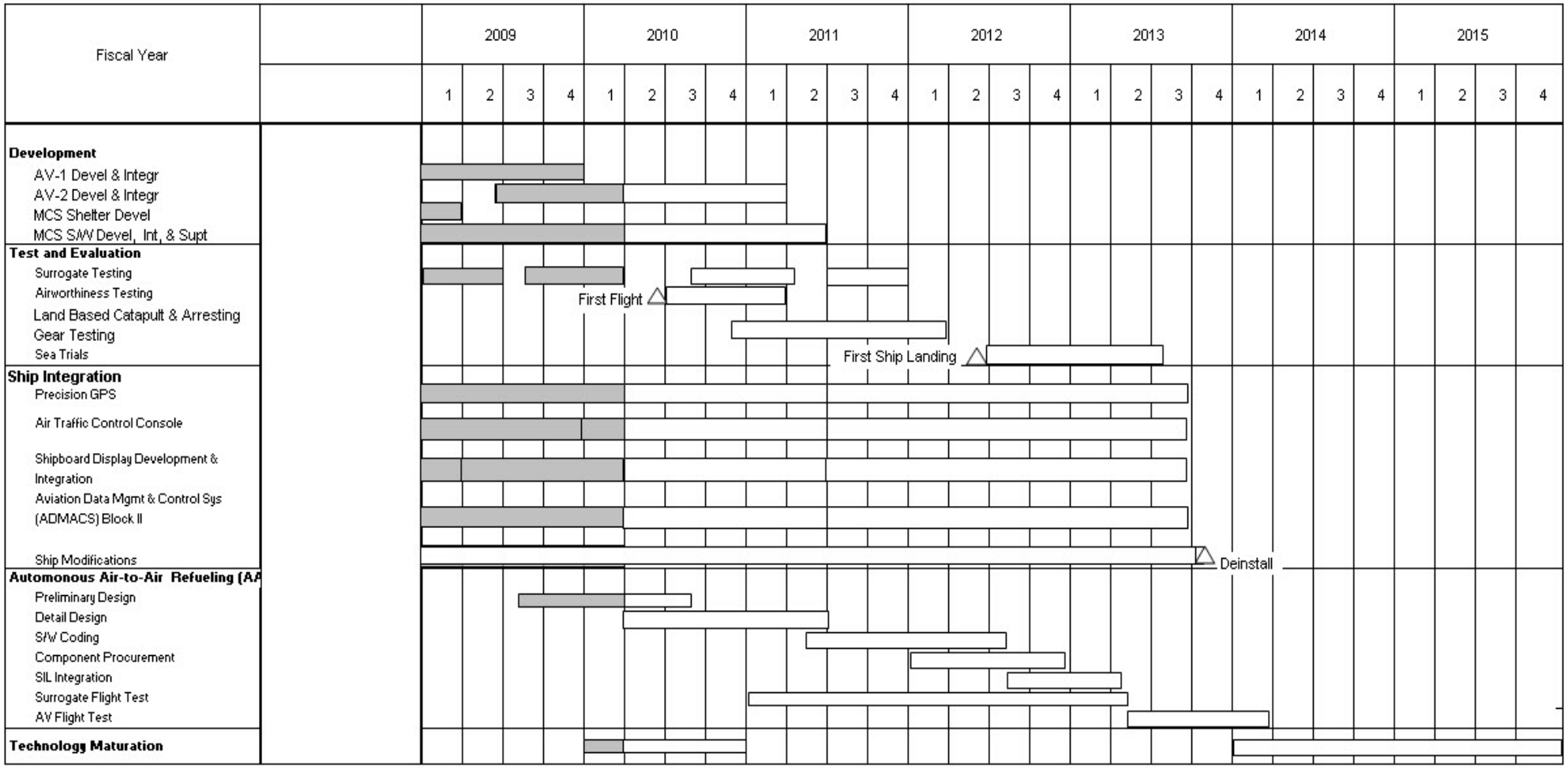

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**PROJECT** 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

Schedule Details

	Start		End	
Event	**Quarter**	**Year**	**Quarter**	**Year**
AV-1 Devel & Integr	1	2009	4	2009
AV - 2 Devel & Integr	2	2009	1	2011
MCS Shelter Devel	1	2009	1	2009
MCS S/W Devel, Int, & Supt	1	2009	2	2011
Surrogate Testing (FY 09)	1	2009	2	2009
Surrogate Testing (FY09-FY10)	3	2009	1	2010
Surrogate Testing (FY11-FY12)	3	2010	2	2011
Surrogate Testing (FY11)	3	2011	4	2011
Airworthiness Testing - First Flight	2	2010	2	2010
Airworthiness Testing	2	2010	1	2011
Land Based Catapult & Arresting Gear Testing	4	2010	1	2012
Sea Trials - First Ship Landing	2	2012	2	2012
Sea Trials	2	2012	3	2013
Precision GPS	1	2009	3	2013
Air Traffic Control Console	1	2009	3	2013
Shipboard Display Development and Integration	1	2009	3	2013
Aviation Data Management and Control System (ADMACS) Block II	1	2009	3	2013
Ship Modifications	1	2009	4	2013

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**PROJECT** 3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*

	Start		End	
Event	**Quarter**	**Year**	**Quarter**	**Year**
Ship Modifications - Deinstall	4	2013	4	2013
AAR Preliminary Design	3	2009	3	2010
AAR Detail Design	2	2010	2	2011
AAR S/W Coding	2	2011	3	2012
AAR Component Procurement	1	2012	4	2012
AAR SIL Integration	3	2012	2	2013
AAR Surrogate Flight Test	1	2011	2	2013
AAR X-47B Flight Test (AV Flight Test)	2	2013	1	2014
Technology Maturation	1	2010	4	2010
Technology Maturation (FY14-FY15)	1	2014	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3191: *UCAS Technical Maturation*	

COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
3191: *UCAS Technical Maturation*	7.042	0.000	70.300	0.000	70.300	82.400	66.000	30.000	30.800	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Navy Unmanned Combat Air System (N-UCAS) program is an Advanced Development effort. The Navy UCAS program will be structured to match program resources to United States Navy (USN) objectives/constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. Candidate technology maturation efforts include transformational communications, advanced integrated propulsion, CV suitable materials, LO sensors and apertures, sense and avoid functionality (all operating in a LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs are being developed as a result of the demonstration. Maturation of candidate technologies support the evaluation of alternatives needed for a future milestone decision and subsequent entry into Engineering and Manufacturing Development (EMD). EMD funding is not covered, nor described in this exhibit.

The Navy consolidated Project 3191 into Project 3178 in FY10 and subsequently separated them in FY11. Navy UCAS technology maturation efforts are contained within project 3178 for FY10.

This project unit includes $.198 million for the Defense Acquisition Development Fund (DAWDF) in FY 2009.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Product Development	6.844	0.000	70.300	0.000	70.300
Identification and maturation of technologies required to support the demonstration of an unmanned, LO planform Navy UCAS on an aircraft carrier including modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs to support the evaluation of alternatives needed for a future milestone decision and subsequent entry into EMD.					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3191: *UCAS Technical Maturation*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: Continued technology maturation, modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs. *FY 2011 Base Plans:* Continue technology maturation, modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs.					
DAWDF Realignment *FY 2009 Accomplishments:* DAWDF Realignment	0.198	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	7.042	0.000	70.300	0.000	70.300

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

In the 2005 QDR, the Navy was directed to restructure the J-UCAS program and develop an unmanned, longer-range carrier-based aircraft capable of being air-refueled to provide greater (CV) standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The primary goal is risk reduction for maturation of critical technologies, while developing the critical data necessary to support a potential follow on acquisition milestone decision. The Navy UCAS effort will focus on designing, developing, and evaluating the core capabilities which safely demonstrate carrier interoperability. As part of this effort, individual contracts will be awarded either competitively or sole sourced in a firm fixed price or cost plus arrangement to evolve various technologies to meet the Technology Readiness Level (TRL)-6 to support the Advanced Development effort.

E. Performance Metrics

The goal of the Technology Maturation project unit is to identify and mature critical technologies and reduce the risk of carrier integration of a UCAS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3191: *UCAS Technical Maturation*

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Development Eng	Various/ Various	NSMA VA	0.000	0.000		43.200	Dec 2010	0.000		43.200	0.000	43.200	Continuing
		Subtotal	0.000	0.000		43.200		0.000		43.200	0.000	43.200	

Remarks

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analyses	C/CPFF	Various Various	0.000	0.000		1.500	Feb 2011	0.000		1.500	0.000	1.500	1.500
Concept Development	WR	NAWCAD MD	0.000	0.000		7.500	Nov 2010	0.000		7.500	0.000	7.500	Continuing
Concept Development	C/CPIF	Various Various	0.000	0.000		18.100	Jan 2011	0.000		18.100	0.000	18.100	18.100
		Subtotal	0.000	0.000		27.100		0.000		27.100	0.000	27.100	19.600

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3191: *UCAS Technical Maturation*	

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		70.300		0.000		70.300	0.000	70.300	19.600

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	PROJECT 3191: *UCAS Technical Maturation*	

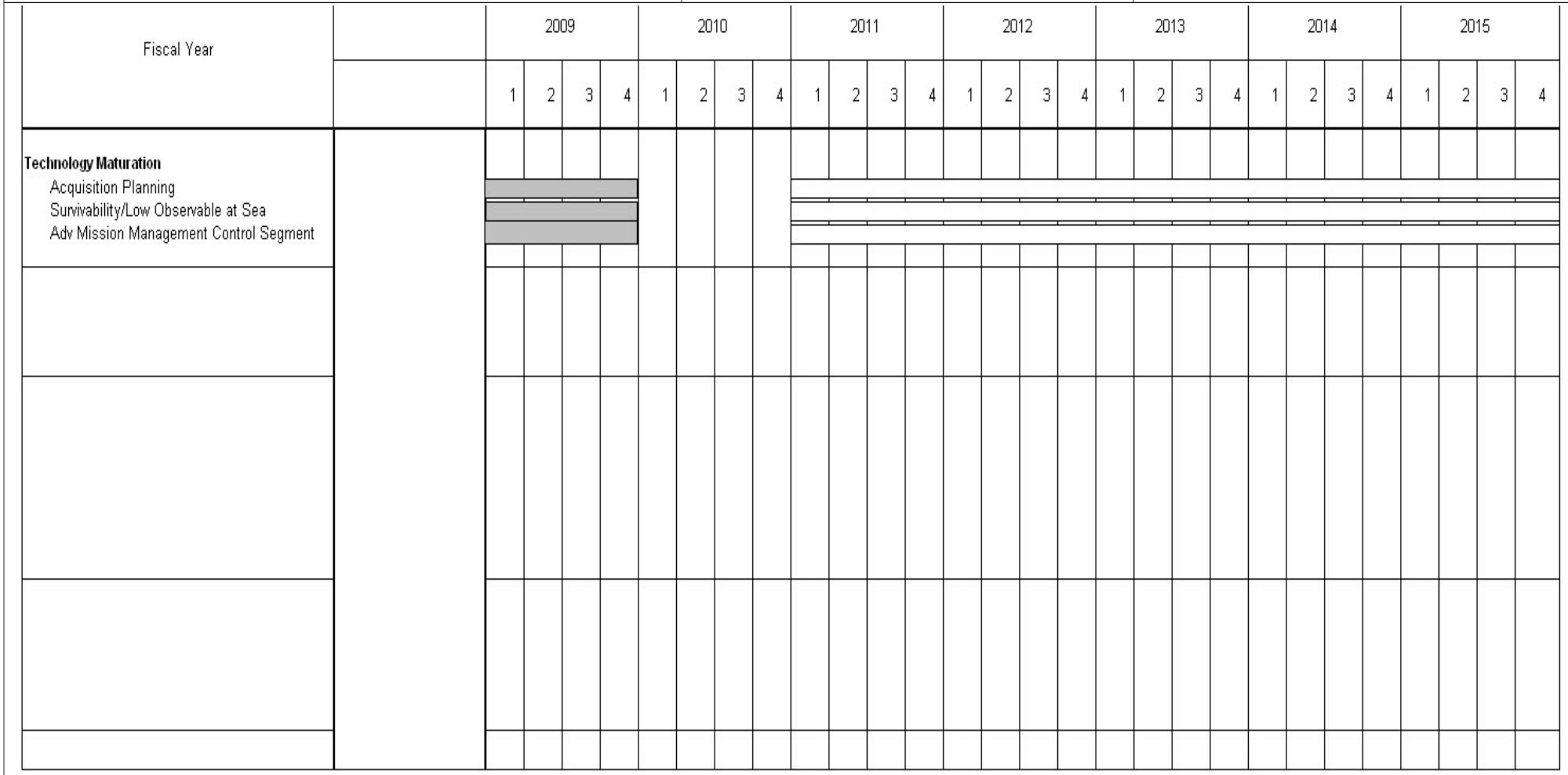

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0604402N: *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**PROJECT** 3191: *UCAS Technical Maturation*

Schedule Details

	Start		End	
Event	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Planning (FY09)	1	2009	4	2009
Survivability/Low Observable at Sea (FY09)	1	2009	4	2009
Adv Mission Management & Control (FY09)	1	2009	4	2009
Acquisition Planning	1	2011	4	2015
Survivability/Low Observable at Sea	1	2011	4	2015
Adv Mission Management & Control	1	2011	4	2015