Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD

BA 5: Development & Demonstration (SDD)

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	1,704.592	1,950.229	707.791	0.000	707.791	621.032	549.618	375.897	134.676	Continuing	Continuing
2261: Joint Strike Fighter EMD	1,459.762	1,704.308	667.915	0.000	667.915	594.004	529.826	375.897	134.676	Continuing	Continuing
3194: Joint Reprogramming Center	28.816	31.813	39.876	0.000	39.876	27.028	19.792	0.000	0.000	0.000	152.703
9999: Congressional Adds	216.014	214.108	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	932.868

#### Note

This Program Element continues development efforts budgeted in program element 0603800N prior to FY 2002. Effective with the PB11 budget submission, F-35B (USMC) and F-35C (USN) budgets are reported against separate budget line items and program elements. Starting in FY11, F-35B budget is reported against the newly created program element 0604800M. The F-35C budget continues to report under program element 0604800N.

### A. Mission Description and Budget Item Justification

The F-35 Lighning II Joint Strike Fighter program will develop and field a family of aircraft that meets the needs of the USN, USAF, USMC, and allies, with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom, 7 other International countries, and 3 Foreign Military Sales cases are participants in the JSF Program.

Funding under this USN project unit supports core F-35 System Design and Demonstration (SDD) objectives and aircraft Follow-on Development efforts.

The SDD Budget funds a total quantity of 19 RDT&E test articles to include 6 ground test articles and 13 flight test articles for Navy and Air Force use. The following fiscal year phasing of the flight test aircraft reflects the scheduled first flight of each asset:

FY07: 1 flight test article FY08: 1 flight test article FY09: 1 flight test article FY10: 10 flight test articles

Basis for FY2010 OEF Supplemental Budget Request: \$1.985M is requested due to revised fuel costs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
1319: Research, Development, Test & Evaluation, Navy	PE 0604800N: JT Strike Fighter (JSF) - EMD	
BA 5: Development & Demonstration (SDD)		

### **B. Program Change Summary (\$ in Millions)**

	FY 2009	FY 2010	<b>FY 2011 Base</b>	FY 2011 OCO	FY 2011 Total
Previous President's Budget	1,744.570	1,741.296	0.000	0.000	0.000
Current President's Budget	1,704.592	1,950.229	707.791	0.000	707.791
Total Adjustments	-39.978	208.933	707.791	0.000	707.791
<ul> <li>Congressional General Reductions</li> </ul>		-8.052			
<ul> <li>Congressional Directed Reductions</li> </ul>		0.000			
<ul> <li>Congressional Rescissions</li> </ul>	0.000	0.000			
<ul> <li>Congressional Adds</li> </ul>		215.000			
<ul> <li>Congressional Directed Transfers</li> </ul>		0.000			
<ul> <li>Reprogrammings</li> </ul>	3.991	0.000			
<ul> <li>SBIR/STTR Transfer</li> </ul>	-43.969	0.000			
<ul> <li>Program Adjustments</li> </ul>	0.000	0.000	707.791	0.000	707.791
Rate/Misc Adjustments	0.000	1.985	0.000	0.000	0.000

### **Congressional Add Details (\$ in Millions, and Includes General Reductions)**

Project: 9999: Congressional Adds

Congressional Add: MAINTAIN DEV OF 2ND SOURCE FOR ENGINE

Congressional Add: F-35B Lift Fan Component Manufacturing

	FY 2009	FY 2010
	214.418	214.108
	1.596	0.000
Congressional Add Subtotals for Project: 9999	216.014	214.108
Congressional Add Totals for all Projects	216.014	214.108

### **Change Summary Explanation**

Technical: F-35 Block IV Follow-on Development starts in FY11 to continue the evolutionary approach of SDD by providing capability enhancements through a combined incremental methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) shall provide the framework and basis for defining, managing, and acquiring the envisioned F-35 enhancements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604800N: JT Strike Fighter (JSF) - EMD	
on Development starts in FY11. DRR changed from 1st of	PRIATION/BUDGET ACTIVITY Research, Development, Test & Evaluation, Navy Development & Demonstration (SDD)  Schedule: Delay in manufacturing and delivery of test aircraft resulted a 1-2 quarter delay to the F-35A Optimized Flight and F-35C First Flight. Block IV	
FY11 from previous President's Budget is shown as zero	TION/BUDGET ACTIVITY  Inch, Development, Test & Evaluation, Navy  Inch, Demonstration (SDD)  Inch Delay in manufacturing and delivery of test aircraft resulted a 1-2 quarter delay to the F-35A Optimized Flight and F-35C First Flight. Block IV Follow-  Invelopment starts in FY11. DRR changed from 1st quarter of FY10 to the 2nd quarter of FY10 to allow time for the Program to implement program changes etailed planning. Additional schedule revision is in process.	

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE PROJECT

1319: Research, Development, Test & Evaluation, Navy PE 0604800N: JT Strike Fighter (JSF) - EMD 2261: Joint Strike Fighter EMD

BA 5: Development & Demonstration (SDD)

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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
2261: Joint Strike Fighter EMD	1,459.762	1,704.308	667.915	0.000	667.915	594.004	529.826	375.897	134.676	Continuing	Continuing
Quantity of RDT&E Articles	1	10	0	0	0	0	0	0	0		

#### Note

This Program Element continues development efforts budgeted in program element 0603800N prior to FY 2002.

The SDD Budget funds a total quantity of 19 RDT&E test articles to include 6 ground test articles and 13 flight test articles for Navy and Air Force use. The following fiscal year phasing of the flight test aircraft reflects the scheduled first flight of each asset:

FY07: 1 flight test article FY08: 1 flight test article FY09: 1 flight test article FY10: 10 flight test articles

### A. Mission Description and Budget Item Justification

The F-35 Lightning II (Joint Strike Fighter) program will develop and field a family of aircraft that meets the needs of the USN, USAF, USMC, and allies, with maximum commonality among the variants, consistent with National Disclosure Policy, to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom, 7 other International countries, and 3 Foreign Military Sales cases are participants in the JSF Program. The following pages combine Navy, Air Force, international, and Congressional add funding.

Funding under this project unit supports core USN System Design and Demonstration (SDD) objectives as well as costs to support Follow-on Development efforts.

The following table presents the total dollars distributed in section B of this R-2A. This has been done to give a more accurate picture of the total dollars being spent on each task.

 Name
 PU
 FY 2009
 FY 2010
 FY 2011

 Navy
 2261
 1,459.762
 1,704.308
 667.915

 Air Force
 3831
 1,743.569
 2,072.897
 1,043.610

 Marine Corps
 2262
 667.916

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE** 

**PROJECT** PE 0604800N: JT Strike Fighter (JSF) - EMD 1319: Research, Development, Test & Evaluation, Navy 2261: Joint Strike Fighter EMD

BA 5: Development & Demonstration (SDD)

244.584 109.511 International 91.386

Total RDT&E Funding addressed in PU 2261 Exhibits: 3,886.716 2,470.827 3,447.915

Name PU FY 2009 FY 2010 FY 2011 3194 28.816 31.813 39.876 Navv

Navy Cong Add 2261A 214.418 214.108

Navy Cong Add 9D99A 1.596

F-35 RDT&E Funding associated with PE 0604800N

under separate PUs: 244.830 245.921 39.876

Total F-35 funding associated with PEs 0604800N,

0604800F and 0604800M: 3.692.745 4,132.637 2,510.703

### B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
System Development & Demonstration	2,452.708	2,445.453	1,465.181	0.000	1,465.181
FY 2009 Accomplishments: Continued System Development and Demonstration (SDD) execution of the Air System, with Lockheed Martin including International Commonality Effort which includes airframe, vehicle systems, mission systems, autonomic logistics, systems engineering and integrated test efforts.					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604800N: JT Strike Fighter (JSF) -	- EMD	PROJECT 2261: Joint	Strike Fighte	er EMD	
B. Accomplishments/Planned Program (\$ in Millions)			I			
	F	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Continue System Development and Demonstration (SDD) exe Martin including International Commonality Effort which include systems, autonomic logistics, systems engineering and integrated in the system of the syste	les airframe, vehicle systems, mission ated test efforts.  ecution of the Air System, with Lockheed les airframe, vehicle systems, mission					
systems, autonomic logistics, systems engineering and integr F135 Propulsion System		507.209	636.978	211.828	0.000	211.828
FY 2009 Accomplishments:  Continued SDD execution of the F135 Propulsion System with testing, autonomic logistics, integration and performing technology.	n Pratt & Whitney to include engine	007.200	000.570	211.020	0.000	211.020
FY 2010 Plans: Continue SDD execution of the F135 Propulsion System with testing, autonomic logistics, integration and performing technology.	•					
FY 2011 Base Plans: Continue SDD execution of the F135 Propulsion System with testing, autonomic logistics, integration and performing technology.	•					
F136 Propulsion System		425.390	429.108	0.000	0.000	0.000
FY 2009 Accomplishments: Congressional Add funding for the F136 Propulsion System a PB 2011 budget submission.	ppears in the PU: 9999 section of the					

### **UNCLASSIFIED**

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy						
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604800N: JT Strike Fighter (J	SF) - EMD	PROJECT 2261: Joint	Strike Fighte	er EMD	
B. Accomplishments/Planned Program (\$ in Millions)	'		1			
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Congressional Add funding for continued F136 Propulsion Sys PU: 9999 section of the PB 2011 budget submission.	stem development effort appears in the					
Systems Engineering	39.531	42.537	49.752	0.000	49.752	
FY 2009 Accomplishments: Continued SDD Systems Engineering including systems operating integration, requirements integration, and interoperability supports of the systems operating including systems operating integration, requirements integration, and interoperability supports of the systems operating including systems operating including systems operating including systems operating integration, requirements integration, and interoperability supports of the systems operating including systems operating integration, requirements integration, and interoperability supports of the systems operating including systems operating integration, requirements integration, and interoperability supports of the systems operating including systems operating integration, requirements integration, and interoperability supports of the systems operating including systems opera	tions requirements analysis, program port.					
Development Test and Evaluation  FY 2009 Accomplishments:  Continued Government Development Test and Evaluation (DT support of first flight of test aircraft. Elements of DT&E include integration testing, and Program Introduction Documents.		101.538	311.926	404.103	0.000	404.103
FY 2010 Plans: Continue Government Development Test and Evaluation (DT& support of first flight of test aircraft. Elements of DT&E include						

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integration testing, and Program Introduction Documents.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	Ottilla Fielder FMD
1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	PE 0604800N: JT Strike Fighter (JSF) - EMD	2261: <i>Joint</i>	Strike Fighter EMD

### B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: Continue Government Development Test and Evaluation (DT&E)/Operational Testing continues in support of first flight of test aircraft. Elements of DT&E include preparation for flight testing, weapons integration testing, and Program Introduction Documents.					
Development Support	100.211	164.758	207.393	0.000	207.393
FY 2009 Accomplishments: Continued SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities.					
FY 2010 Plans: Continue SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities.					
FY 2011 Base Plans: Continue SDD Support efforts for airframe, air vehicle systems, mission systems, weapons integration, mission support, and autonomic logistics development activities.					
Program Management Support	37.342	70.064	74.518	0.000	74.518
FY 2009 Accomplishments:  Continued management support services, travel, engineering technical services, and studies analyses and evaluations in support of program objectives.					
FY 2010 Plans:					
Continue management support services, travel, engineering technical services, and studies analyses and evaluations in support of program objectives.					

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Exhibit R-2A, RDT&E Project Jus	stification: PE	3 2011 Navy	,						DATE: Feb	ruary 2010	
APPROPRIATION/BUDGET ACTI 1319: Research, Development, Tes BA 5: Development & Demonstration	st & Evaluatio	n, Navy		<b>R-1 ITEM N</b> PE 0604800		<b>TURE</b> e Fighter (JS	F) - EMD	PROJECT 2261: Joint			
B. Accomplishments/Planned Pro	ogram (\$ in I	/lillions)						I			
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: Continue management support of pand evaluations in support of pand evaluations.			ering technica	al services, a	and studies	analyses					
Follow-on Development							0.000	0.000	58.052	0.000	58.052
FY 2011 Base Plans: Initiate follow-on development survivability, and upgrades red delivery to services and partner relevant requirements post-IO	quired to supper nations cor	ort F-35 var	iants. Efforts	s will suppor	t aircraft and	d engine					
			Accomplish	ments/Plani	ned Program	ns Subtotals	3,663.929	4,100.824	2,470.827	0.000	2,470.827
C. Other Program Funding Sumn	nary (\$ in Mil	lions)									
	• • • • • • • • • • • • • • • • • • • •	•	FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	<b>Base</b>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	<b>Total Cos</b>
• RDT&E/0604800F: Joint Strike Fighter	1,743.569	2,072.897	1,043.610	0.000	1,043.610	1,298.495	1,005.511	666.295	223.367	0.000	20,770.580
• International1 : International Partners	244.584	109.511	91.386	0.000	91.386	19.400	11.620	0.000	0.000	0.000	4,549.590
• APAF/0207142F: F-35 Joint Strike Fighter	1,721.724	2,484.641	4,279.515	204.900	4,484.415	4,489.992	4,906.158	6,558.564	7,418.5021	147,239.1701	81,549.639
• RDT&E/0604800M: Joint Strike Fighter (JSF) - EMD	0.000	0.000	667.916	0.000	667.916	594.004	529.826	375.925	134.707	0.000	2,302.378
• APN/0152: F-35 Joint Strike Fighter STOVL	0.000	0.000	2,576.142	0.000	2,576.142	2,863.025	4,016.672	3,447.547	3,451.525	22,070.323	38,425.234
• APN/0605B: F-35 Joint Strike	0.000	0.000	164.135	0.000	164.135	136.957	311.553	325.794	324.437	1,718.297	2,981.173

**UNCLASSIFIED** 

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Fighter STOVL Spares

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

DATE: February 2010

#### APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD | 2261: Joint Strike Fighter EMD

BA 5: Development & Demonstration (SDD)

#### C. Other Program Funding Summary (\$ in Millions)

	<b>J</b> (		FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	<b>FY 2010</b>	Base	OCO	<b>Total</b>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	<b>Total Cost</b>
APN/0147: F-35 Joint Strike	1,692.965	4,464.251	1,886.988	0.000	1,886.988	2,012.008	2,636.771	2,467.155	2,764.547	27,964.270	47,236.923
Fighter CV											
APN/0605C: F-35 Joint Strike	182.508	248.191	107.030	0.000	107.030	92.216	178.496	194.183	192.599	2,049.006	3,244.229
Fighter CV Spares											
OPN/4265: Other Aviation	2.972	3.017	5.410	0.000	5.410	5.410	4.901	4.981	5.713	0.000	33.259
Support Equipment											
MCN/0212576N: Edwards Ramp	0.000	3.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.007
Extension											
International2: International	874.014	629.965	1,936.600	0.000	1,936.600	4,690.200	5,737.700	7,893.900	7,898.740	0.000	29,661.119
Procurement											
• MC/0207142F: <i>USAF MILCON</i>	21.973	73.360	139.640	0.000	139.640	73.783	82.313	0.000	27.619	0.000	418.688
• APAF/0204142F: <i>USAF</i>	0.000	0.000	123.936	0.000	123.936	8.319	5.047	3.461	31.472	0.000	172.235
Modification Funding											

### **D. Acquisition Strategy**

Activities in the prior phase of JSF centered around three distinct objectives to provide a sound foundation for the start of SDD in Fall 2001:

- (1) facilitated the Services' development of fully validated, affordable operational requirements.
- (2) lowered risk by investing in and demonstrating key leveraging technologies that lowered the cost of development, production and ownership.
- (3) demonstrated operational concepts.

Early warfighter and technologist interaction was an essential aspect of the requirements definition process, and achieved JSF affordability goals. To an unprecedented degree the JSF Program used cost-performance trades early, as an integral part of the weapon system development process. The Services defined requirements through an iterative process, balancing weapon system capability against life cycle cost at every stage. Each iteration of requirements was provided to industry. They evolved their designs and provided cost data back to the warfighters. The warfighters evaluated trades and made decisions for the next iteration. This iterative process produced iterations of the Services' Joint Interim Requirements Documents in 1995, 1997, 1998 and culminated in the approved joint Operational Requirements Document (ORD) in FY 2000.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy **DATE:** February 2010 **PROJECT** APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE 2261: Joint Strike Fighter EMD

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD BA 5: Development & Demonstration (SDD)

A sizable technology maturation effort was conducted to reduce risk and life cycle cost (LCC) through technology maturation and demonstrations. The primary emphasis was on technologies identified as high payoff contributors to affordability, supportability, survivability, and lethality. Numerous demonstrations were accomplished to validate performance and life cycle cost impact to component, subsystem, and the total system.

In November 1996, contracts were awarded to Boeing and Lockheed Martin for Concept Demonstration Programs. These competing contractors built and flew concept demonstrator aircraft, conducted concept unique ground demonstrations, and refined their respective weapon system concepts. Specifically, Boeing and Lockheed Martin demonstrated commonality and modularity, STOVL hover and transition, and low speed handling gualities of their respective weapon system concepts. Pratt and Whitney provided propulsion hardware and engineering support. General Electric continued development of a second, interchangeable, engine for competition in production.

Following evaluation of proposals and a favorable Milestone B decision, the JSF Program entered SDD on 26 October 2001 with SDD contract awards to Lockheed Martin and Pratt & Whitney. The SDD plan reflects a block approach, based on open systems architecture, for accomplishing aircraft and weapons integration. General Electric continues propulsion development efforts through FY 2009 when program funding ends.

Follow-on Development will continue the evolutionary approach of SDD by providing capability enhancements though an incremental methodology. The Joint Capabilities Integration and Development System (JCIDS) and Defense Acquisition System (DAS) shall provide the framework and basis for defining, managing and acquiring the envisioned F-35 enhancements. The plan for each follow-on increment will include all the development, integration and verification testing of those capabilities. Additionally, the non-recurring efforts for cut-in of retrofit, production and sustainment will be included. Retrofit planning will be based on upgrading all previously fielded aircraft to the latest increment in order to limit the number of configurations, thus reducing life cycle cost. Retrofit execution will be in accordance with the stakeholder's direction.

These follow-on development efforts will be procured via cost type contracts. It is anticipated that fee provisions will be used to target and motivate contractor performance. The new configurations will be incorporated into production and, if required by the U.S. Services or SDD International Partners, retrofitted to fielded aircraft under F-35 production and sustainment contracts. Similar to SDD, BOA's and ID/IQ contracts may be used for trade studies and analyses to supplement Follow-On requirements development.

The updated JSF Acquisition Strategy and program schedule were approved following the May 05 DAB. APR 06 DAB authorized full funding for LRIP I procurement. USAF LRIP I Advanced Procurement funding was awarded during FY 2006, followed by the USAF Regular Procurement award in FY 2007. USAF and DoN Advanced Procurement funding for LRIP II was awarded during FY07. USAF LRIP II full-funding contract award occurred in April 08. DoN LRIP II full funding contract was awarded July 08, upon successful first flight of the DoN STOVL aircraft. USAF and DoN Advance Procurement funding for LRIP III was awarded in May 08, LRIP III full funding was awarded Jun 09. LRIP IV advance procurement was awarded in Mar 09 and full funding contract award will occur in Feb 10.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

BA 5: Development & Demonstration (SDD)

Budget reflects a one year flight test extension approved by the Executive Steering Committee.

#### **E. Performance Metrics**

**COMBAT RADIUS** 

CTOL MEETS/EXCEEDS TRIPWIRE REQUIREMENT

CV MEETS/EXCEEDS TRIPWIRE REQUIREMENT

STOVL MEETS/EXCEEDS TRIPWIRE REQUIREMENT

CV RECOVERY

VPA MIN MEETS/EXCEEDS REQUIREMENT IN TRIPWIRE BAND

STOVL PERFORMANCE

FLAT DECK (HHH FUEL) MEETS/EXCEEDS REQUIREMENT IN TRIPWIRE BAND SKI JUMP (HMMH FUEL) MEETS/EXCEEDS REQUIREMENT IN TRIPWIRE BAND

VLBB MEETS/EXCEEDS REQUIREMENT IN TRIPWIRE BAND

INTEROPERABILITY

Net Ready Criteria- MEETS/EXCEEDS REQUIREMENT IN TRIPWIRE BAND

RF SIGNATURE-MEETS/EXCEEDS TRIPWIRE REQUIREMENT

MISSION RELIABILITY

CTOL MEETS/EXCEEDS TRIPWIRE REQUIREMENT

CV EXCEEDS ORD OBJECTIVE

STOVL USMC MEETS/EXCEEDS TRIPWIRE REQUIREMENT STOVL UK MEETS/EXCEEDS TRIPWIRE REQUIREMENT

SORTIE GENERATION RATE

CTOL MEETS/EXCEEDS TRIPWIRE REQUIREMENT

CV MEETS/EXCEEDS TRIPWIRE REQUIREMENT

STOVL USMC MEETS/EXCEEDS TRIPWIRE REQUIREMENT

STOVL UK MEETS/EXCEEDS TRIPWIRE REQUIREMENT

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy			DATE: February 2010
	R-1 ITEM NOMENCLATURE	PROJECT	
1319: Research, Development, Test & Evaluation, Navy	PE 0604800N: JT Strike Fighter (JSF) - EMD	2261: <i>Joint</i>	Strike Fighter EMD
BA 5: Development & Demonstration (SDD)			

LOGISTICS FOOTPRINTS C-17

CTOL MEETS/EXCEEDS TRIPWIRE REQUIREMENT STOVL USMC MEETS/EXCEEDS TRIPWIRE REQUIREMENT

LOGISTICS FOOTPRINT- VOLUME

CV EXCEEDS ORD OBJECTIVE

STOVL USMC MEETS/EXCEEDS TRIPWIRE REQUIREMENT

STOVL UK MEETS/EXCEEDS TRIPWIRE REQUIREMENT

LOGISTICS FOOTPRINT-WEIGHT
CV EXCEEDS ORD OBJECTIVE
STOVL USMC EXCEEDS ORD OBJECTIVE
STOVL UK MEETS/EXCEEDS TRIPWIRE REQUIREMENT

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

**Product Development (\$ in Millions)** 

				FY 2	2010	FY 2 Ba	-	FY 2		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
Primary H/W Development - SDD	C/CPAF	Lockheed Martin Ft Worth TX	23,060.300	2,431.167	Oct 2009	1,462.504	Oct 2010	0.000		1,462.504	2,907.330	29,861.301	27,481.288
Primary H/W Development - IDIQ (D.O. 22)	SS/Various	Lockheed Martin Ft Worth TX	5.015	7.286	Oct 2009	2.677	Oct 2010	0.000		2.677	2.350	17.328	17.328
Primary H/W Development - IDIQ (D.O. 0009)	SS/Various	Lockheed Martin Ft Worth TX	19.733	7.000	Oct 2009	0.000		0.000		0.000	0.000	26.733	26.733
Primary H/W Development - BOA	SS/Various	Lockheed Martin Ft Worth TX	3.511	0.000		0.000		0.000		0.000	0.000	3.511	3.511
Primary H/W Development - SDD	SS/CPAF	Pratt & Whitney Hartford, CT	6,065.573	636.978	Oct 2009	211.828	Oct 2010	0.000		211.828	373.286	7,287.665	6,660.675
Primary H/W Development - Closeout	SS/CPFF	Pratt & Whitney Hartford, CT	1.364	0.000		0.000		0.000		0.000	0.000	1.364	1.364
Primary H/W Development - CDP Closeout	SS/CPFF	Pratt & Whitney Hartford, CT	2.211	0.000		0.000		0.000		0.000	0.000	2.211	2.211
Primary H/W Development - BOA	SS/Various	Pratt & Whitney Hartford, CT	35.983	0.000		0.000		0.000		0.000	0.000	35.983	35.983
Primary H/W Development - IDIQ	SS/Various	Pratt & Whitney Hartford, CT	10.862	0.000		0.000		0.000		0.000	0.000	10.862	10.862
Primary H/W Development -SDD	SS/CPAF	GE Cinn. OH	1,670.367	429.108	Oct 2009	0.000		0.000		0.000	0.000	2,099.475	1,716.386
Primary H/W Development - IDIQ	SS/Various	GE Cinn. OH	0.264	0.000		0.000		0.000		0.000	0.000	0.264	0.264
	SS/Various	GE	4.175	0.000		0.000		0.000		0.000	0.000	4.175	4.175

### **UNCLASSIFIED**

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

**Product Development (\$ in Millions)** 

				FY 2	2010	FY 2 Ba	2011 se	FY 2		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
Primary H.W Development - IDIQ		Cinn. OH											
Primary H/W Development - F136 Transition	SS/Various	GE Cinn. OH	100.400	0.000		0.000		0.000		0.000	0.000	100.400	100.400
Primary H/W Development - BOA	SS/Various	GE Cinn. OH	5.548	0.000		0.000		0.000		0.000	0.000	5.548	5.548
Primary H/W Development - Phase IIIB	SS/Various	GE Cinn. OH	382.753	0.000		0.000		0.000		0.000	0.000	382.753	382.753
Primary H/W Development Systems Engineering	SS/Various	various various	240.041	42.537	Oct 2009	0.000		0.000		0.000	0.000	282.578	282.578
Follow on Development	SS/CPAF	Lockheed Martin Ft Worth TX	0.000	0.000		52.073	Jan 2011	0.000		52.073	292.333	344.406	344.406
Follow on Development	SS/CPAF	Pratt & Whitney Hartford, CT	0.000	0.000		4.250	Jan 2011	0.000		4.250	9.000	13.250	13.250
Follow on Development	Various/ Various	various various	0.000	0.000		0.067	Oct 2010	0.000		0.067	1.866	1.933	Continuing
Product Development Systems Engineering	Various/ Various	various various	0.000	0.000		49.752	Oct 2010	0.000		49.752	237.634	287.386	Continuing
		Subtotal	31,608.100	3,554.076		1,783.151		0.000		1,783.151	3,823.799	40,769.126	37,089.715

#### **Remarks**

Note: Total Values of prime contracts differs from Total Cost because (a) Lockheed Martin and Pratt & Whitney Contracts have not been modified to reflect planned funding allocations and (b) no funds are budgetd for F136 (FET GE/RR) beyond FY10.

### **UNCLASSIFIED**

R-1 Line Item #127 Page 15 of 32

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE**: February 2010

### APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

### **Support (\$ in Millions)**

				FY 2	2010	FY 2 Ba	-	FY 2 OC		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
Development Support	Various/ Various	Eglin AFB Florida	71.142	18.081	Oct 2009	20.999	Oct 2010	0.000		20.999	72.006	182.228	Continuing
Development Support	Various/ Various	ASC/AFRL Dayton, Ohio	35.388	9.463	Oct 2009	6.096	Oct 2010	0.000		6.096	31.376	82.323	Continuing
Development Support	Various/ Various	Bolling AFB Washington DC	6.400	1.170	Oct 2009	1.142	Oct 2010	0.000		1.142	2.198	10.910	Continuing
Development Support	Various/ Various	DMEA Dayton, Ohio	4.112	0.000		0.000		0.000		0.000	0.000	4.112	Continuing
Development Support	MIPR	ESC Hanscom, MA	6.383	0.836	Oct 2009	0.455	Oct 2010	0.000		0.455	1.376	9.050	Continuing
Development Support	Various/ Various	AEDC/Fuel Arnold TN	107.092	62.447	Oct 2009	72.364	Oct 2010	0.000		72.364	179.013	420.916	Continuing
Development Support	WR	NAS Jacksonville Jacksonville, FL	4.832	2.009	Oct 2009	2.143	Oct 2010	0.000		2.143	9.559	18.543	Continuing
Development Support	Various/ Various	Various Various	191.088	10.572	Oct 2009	16.068	Oct 2010	0.000		16.068	41.721	259.449	Continuing
Development Support	Various/ Various	NAWC China Lake	71.847	14.297	Oct 2009	11.751	Oct 2010	0.000		11.751	41.895	139.790	Continuing
Development Support	Various/ Various	NAWC TSD Florida	6.096	1.854	Oct 2009	2.038	Oct 2010	0.000		2.038	7.990	17.978	Continuing
Development Support	Various/ Various	NAWC PAX Maryland	233.248	42.612	Oct 2009	73.381	Oct 2010	0.000		73.381	188.114	537.355	Continuing
Development Support	WR	NSWC Maryland	2.880	1.318	Oct 2009	0.909	Oct 2010	0.000		0.909	2.265	7.372	Continuing
Development Support		SPAWAR	6.484	0.099	Oct 2009	0.045	Oct 2010	0.000		0.045	0.249	6.877	Continuing

### **UNCLASSIFIED**

R-1 Line Item #127 Page 16 of 32

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

Support (\$ in Millions)

				FY 2	010	FY 2 Bas		FY 2		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
	Various/ Various	California											
SBIR Congressional Add	Various/ Various	Various Various	24.187	0.000		0.000		0.000		0.000	0.000	24.187	Continuing
Follow on Development	Various/ Various	Various Various	0.000	0.000		1.662	Oct 2010	0.000		1.662	40.215	41.877	Continuing
		Subtotal	771.179	164.758		209.053		0.000		209.053	617.977	1,762.967	

#### Remarks

Note: Total Values of prime contracts differs from Total Cost because (a) Lockheed Martin and Pratt & Whitney Contracts have not been modified to reflect planned funding allocations and (b) no funds are budgetd for F136 (FET GE/RR) beyond FY10.

Test and Evaluation (\$ in Millions)

				FY 2	010	FY 2 Ba		FY 2		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
Development Test & Evaluation	Various/ Various	NAWC Pax Maryland	158.437	136.921	Oct 2009	174.158	Oct 2010	0.000		174.158	851.343	1,320.859	Continuing
Development Test & Evaluation	Various/ Various	NAWC China Lake California	39.441	13.218	Oct 2009	15.266	Oct 2010	0.000		15.266	39.148	107.073	Continuing
Development Test & Evaluation	РО	Edwards AFB California	147.538	97.290	Oct 2009	129.550	Oct 2010	0.000		129.550	291.103	665.481	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

**Test and Evaluation (\$ in Millions)** 

				FY 2	2010	FY 2 Ba		FY 2		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
Development Test & Evaluation	Various/ Various	Various Various	49.391	28.151	Oct 2009	29.127	Oct 2010	0.000		29.127	69.577	176.246	Continuing
Development Test & Evaluation	MIPR	WEPS Eglin	60.274	16.119	Oct 2009	21.103	Oct 2010	0.000		21.103	9.614	107.110	Continuing
Development Test & Evaluation	MIPR	JITC Various	0.503	0.000		0.000		0.000		0.000	0.000	0.503	Continuing
Development Test & Evaluatio	Various/ Various	OT- UK Various	3.270	6.910	Oct 2009	11.185	Oct 2010	0.000		11.185	34.931	56.296	Continuing
Development Test & Evaluation	MIPR	OT-AFOTEC/ AFFTC Various	18.124	10.956	Oct 2009	20.179	Oct 2010	0.000		20.179	405.214	454.473	Continuing
Development Test & Evaluation	Various/ Various	OT-JITC/OPTEV Various	3.485	2.361	Oct 2009	3.535	Oct 2010	0.000		3.535	33.396	42.777	Continuing
		Subtotal	480.463	311.926		404.103		0.000		404.103	1,734.326	2,930.818	

#### Remarks

Note: Total Values of prime contracts differs from Total Cost because (a) Lockheed Martin and Pratt & Whitney Contracts have not been modified to reflect planned funding allocations and (b) no funds are budgetd for F136 (FET GE/RR) beyond FY10.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

Management Services (\$ in Millions)

_	-												
				FY 2	010	FY 2 Ba		FY 2 OC		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
Program Management	SS/CPFF	ACT 1 Virginia	0.000	2.750	Oct 2009	2.832	Oct 2010	0.000		2.832	12.206	17.788	17.789
Program Management - Mantech	C/FP	Mantech Virginia	31.399	6.681	Oct 2009	7.015	Oct 2010	0.000		7.015	31.749	76.844	76.844
Program Management - PA Consulting	SS/CPFF	PA Consulting Virginia	0.000	2.021	Oct 2009	2.082	Oct 2010	0.000		2.082	8.970	13.073	13.073
Program Management - DRC	C/CPFF	DRC Virginia	0.000	2.333	Oct 2009	3.000	Oct 2010	0.000		3.000	3.000	8.333	8.333
Program Management	C/CPFF	First Principles Virginia	0.000	0.881	Oct 2009	0.909	Oct 2010	0.000		0.909	3.951	5.741	5.741
Program Management	C/CPFF	Wyle Virginia	49.032	18.066	Oct 2009	18.970	Oct 2010	0.000		18.970	85.602	171.670	171.670
Program Management	C/Various	Saftas Virginia	46.562	15.504	Oct 2009	16.174	Oct 2010	0.000		16.174	67.581	145.821	145.821
Program Management	C/CPAF	Stanley Virginia	110.805	17.810	Oct 2009	19.500	Oct 2010	0.000		19.500	88.060	236.175	236.175
Travel and Miscellaneous	Various/ Various	Various Various	22.917	4.017	Oct 2009	4.037	Oct 2010	0.000		4.037	16.331	47.302	Continuing
Program Manaement	Various/ Various	Various Various	0.800	0.000		0.000		0.000		0.000	0.000	0.800	Continuing
		Subtotal	261.515	70.063		74.519		0.000		74.519	317.450	723.547	675.446

#### Remarks

Note: Total Values of prime contracts differs from Total Cost because (a) Lockheed Martin and Pratt & Whitney Contracts have not been modified to reflect planned funding allocations and (b) no funds are budgetd for F136 (FET GE/RR) beyond FY10.

### **UNCLASSIFIED**

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604800N: JT Strike Fighter (JSF) - EMD

**PROJECT** 

2261: Joint Strike Fighter EMD

	Total Prior Years Cost	FY 2010	FY 2 Ba	2011 ise	FY 2	-	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33,121.257	4,100.823	2,470.826		0.000		2,470.826	6,493.552	46,186.458	37,765.161

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Subtotals and total may not add due to rounding.

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

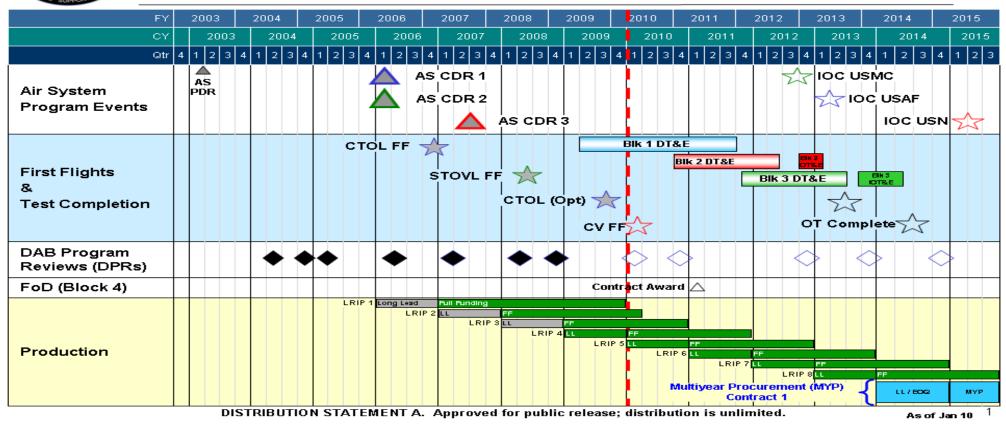
PE 0604800N: JT Strike Fighter (JSF) - EMD

**PROJECT** 

2261: Joint Strike Fighter EMD



# JSF Top-Level Development Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD 2261: Joint Strike Fighter EMD

BA 5: Development & Demonstration (SDD)

### Schedule Details

	Sta	art	En	d
Event	Quarter	Year	Quarter	Year
DAB Program Review (DPR) - FY10	2	2010	2	2010
DAB Program Review (DPR) - FY11	1	2011	1	2011
DAB Program Review (DPR) - FY13	1	2013	1	2013
DAB Program Review (DPR) - FY14	1	2014	1	2014
DAB Program Review (DPR) - FY15	1	2015	1	2015
CTOL Optimized Flight	4	2009	4	2009
CV First Flight	2	2010	2	2010
Block 1, DT&E	3	2009	4	2011
Block 2, DT&E	1	2011	3	2012
Block 3, DT&E	1	2012	3	2013
Block 2, OT&E	1	2013	2	2013
Block 3, OT&E	1	2014	3	2014
DT Complete	3	2013	3	2013
OT Complete	3	2014	3	2014
Follow-on Development Contract Award	2	2011	2	2011
LRIP I (CT0L)	1	2009	1	2010
LRIP II (CTOL, STOVL)	1	2009	2	2010
LRIP III (CTOL, STOVL, CV, UK)	1	2009	1	2011

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

**R-1 ITEM NOMENCLATURE** 

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)

PE 0604800N: JT Strike Fighter (JSF) - EMD

2261: Joint Strike Fighter EMD

	Sta	art	En	ıd
Event	Quarter	Year	Quarter	Year
LRIP IV (CTOL, STOVL, CV, UK)	2	2009	1	2012
LRIP V (CTOL, STOVL, CV, UK)	2	2010	1	2013
LRIP VI (CTOL, STOVL, CV, UK)	2	2011	1	2014
LRIP VII (CTOL, STOVL, CV, UK)	2	2012	1	2015
LRIP VIII (CTOL, STOVL, CV, UK)	2	2013	4	2015
Initial Operational Capability (IOC Thresold) USMC	4	2012	4	2012
Initial Operational Capability (IOC) USAF	2	2013	2	2013
Initial Operational Capability (IOC) USN	2	2015	2	2015
DAB Program Review (DPR) - FY09	1	2009	1	2009
Long Lead/EOQ	2	2014	1	2015
MYP	2	2015	4	2015

**DATE:** February 2010

APPROPRIATION/BUDGET AC 1319: Research, Development, T BA 5: Development & Demonstra	est & Evaluatio	n, Navy			IOMENCLA ON: <i>JT Strike</i>		F) - EMD	PROJECT 3194: Joint	Reprogrami	ming Center	
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
3194: Joint Reprogramming Center	28.816	31.813	39.876	0.000	39.876	27.028	19.792	0.000	0.000	0.000	152.703
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

### A. Mission Description and Budget Item Justification

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

The United States Research Laboratory (USRL)/Capability Concept project, previously referred to as the JSF Joint Reprogramming Center (JRC)/Capability Concept is required to adequately develop and maintain Operation Sensor Engineering F-35(V) Mission Data to support USN, USMC, and USAF multi-mission objectives. USRL will allow rapid operational response to threat changes. Funding for this project unit (3194) is provided specifically for:

- Aircraft sensor function and combat identification
- Conducting Offensive Identification/Jamming of potential threats
- Providing self defense against surface threats, air, and missile threats.
- Detecting and identifying targets, to include moving land, air, and missile targets
- Providing mission planning to ensure aircraft survivability
- Conducting offensive operations against surface threats;
- Conducting sensor management and information processing.
- Software development for this requirement is funded through the F-35 Joint Strike Fighter SDD baseline.

### B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
USRL Build Up	28.816	25.938	28.706	0.000	28.706
FY 2009 Accomplishments: Funds provided to Lockheed Martin Aero in support of reprogramming techniques, development and verification capacity required to adjust to emergent threats, and validate system effectiveness to increase survivability of the weapon system.					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		<b>DATE:</b> February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604800N: JT Strike Fighter (JSF) - EMD	PROJECT 3194: Joint Reprogramming Center
B. Accomplishments/Planned Program (\$ in Millions)		

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Provide funds to Lockheed Martin Aero in support of reprogramming techniques, development and verification capacity required to adjust to emergent threats, and validate system effectiveness to increase survivability of the weapon system.					
FY 2011 Base Plans: Provide funds to Lockheed Martin Aero in support of reprogramming techniques, development and verification capacity required to adjust to emergent threats, and validate system effectiveness to increase survivability of the weapon system.					
Development Support	0.000	5.875	11.170	0.000	11.170
FY 2010 Plans: Continue SDD Systems Engineering (SE) including systems operations requirements analysis, program integration, requirements integration, and interoperability support of the United States Reprogramming Laboratory (previously called the Joint Reprogramming Center).					
FY 2011 Base Plans: Continue SDD Systems Engineering (SE) including systems operations requirements analysis, program integration, requirements integration, and interoperability support of the United States Reprogramming Laboratory (previously called the Joint Reprogramming Center).					
Accomplishments/Planned Programs Subtotals	28.816	31.813	39.876	0.000	39.876

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy **DATE:** February 2010 **PROJECT** APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy PE 0604800N: JT Strike Fighter (JSF) - EMD

3194: Joint Reprogramming Center BA 5: Development & Demonstration (SDD)

### C. Other Program Funding Summary (\$ in Millions)

N/A

### D. Acquisition Strategy

The Joint Reprogramming Capability is a subset of the JSF Program and falls within the JSF acquisition strategy. JRC is needed to support scheduled Initial Operational Capability dates (and supporting test activity) for the three JSF variants. To that end, a concept of operations (CONOPS) is being developed for JRC to address Mission Data (MD) development and verification/validation/testing and to merge service unique requirements into Joint processes/procedures. Previously envisaged as a single facility, JRC now is comprised of two distinct facilities under the JRC concept. The United States Reprogramming Laboratory (USRL) will support U.S. Joint Service reprogramming requirements; the Partner Reprogramming Laboratory will focus on International Partner areas of interest.

Inter-Service collaboration is ongoing to formalize the USRL requirements planning process and will eliminate duplication of effort, will maximize technology to improve configuration control, will employ advance networks, and will ensure the implementation of an enterprise (single shared database) solution. By capitalizing on legacy platform synergy, operational mission data intellect, proven processes, and existing reprogramming center resources, this approach also will improve efficiencies. A Joint Command reprogramming authority will determine/manage reprogramming priorities and implementation authority.

USRL Mission data development strategy is based upon an assessment of legacy systems, F-22 data, corporate expertise of Eglin/Pt Mugu personnel, adjusted cost and schedule projections keyed to complexity of multi-variant and multi-mission aircraft, JSF-specific utilization of multiple sources of non-sustained disparate, raw, intelligence data, development of threat assessment - metrics and build-up of real-world scenarios for systems verification and validation. These efforts support JSF operational requirements, interoperability, and fratricide mitigation.

Although the F-35 JSF SDD Program has contracted with Lockheed Martin and Pratt & Whitney for the SDD of the JSF, LM does not have the laboratory space availability or expertise to perform operational evaluation of lab and flight test data and support field recommendations to the level needed. The complexity and magnitude of JSF mission data loads drives the decision to utilize government and contractor resources to design and develop a joint-Service reprogramming facility at Eglin AFB.

#### E. Performance Metrics

USRL Stand-up - 1st Quarter FY2011

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy

PE 0604800N: JT Strike Fighter (JSF) - EMD

3194: Joint Reprogramming Center

BA 5: Development & Demonstration (SDD)

### **Product Development (\$ in Millions)**

				FY 2	010	FY 2 Ba		FY 2		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
Primary H/W Development	C/CPAF	Lockheed Martin Texas	30.506	25.938	Oct 2009	28.706	Oct 2010	0.000		28.706	18.581	103.731	57.775
		Subtotal	30.506	25.938		28.706		0.000		28.706	18.581	103.731	57.775

#### **Remarks**

Target Value of Contract differs from Total cost because Lockheed martin contract has not been modified to reflect planned funding allocation.

### Support (\$ in Millions)

	•												I
				FY 2	010	FY 2 Ba		FY 2		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
Development Support	WR	NAWCWD China Lake California	3.000	5.875	Oct 2009	11.170	Oct 2010	0.000		11.170	28.239	48.284	Continuing
		Subtotal	3.000	5.875		11.170		0.000		11.170	28.239	48.284	

#### **Remarks**

	Total Prior Years Cost	FY 2010		2011 ise	FY 2	2011 CO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.506	31.813	39.876		0.000		39.876	46.820	152.015	57.775

Exhibit R-3, RDT&E Project Cost Analysis: PB	2011 Navy					DA	TE: Februa	ary 2010	
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation BA 5: Development & Demonstration (SDD)	, Navy			ITEM NOMENCLATURE 0604800N: JT Strike Fighte	er (JSF) - EMD	OJECT 4: Joint Rep	orogrammir	ng Center	
	Total Prior Years Cost	FY 20	)10	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Remarks									

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy

**DATE:** February 2010

#### APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

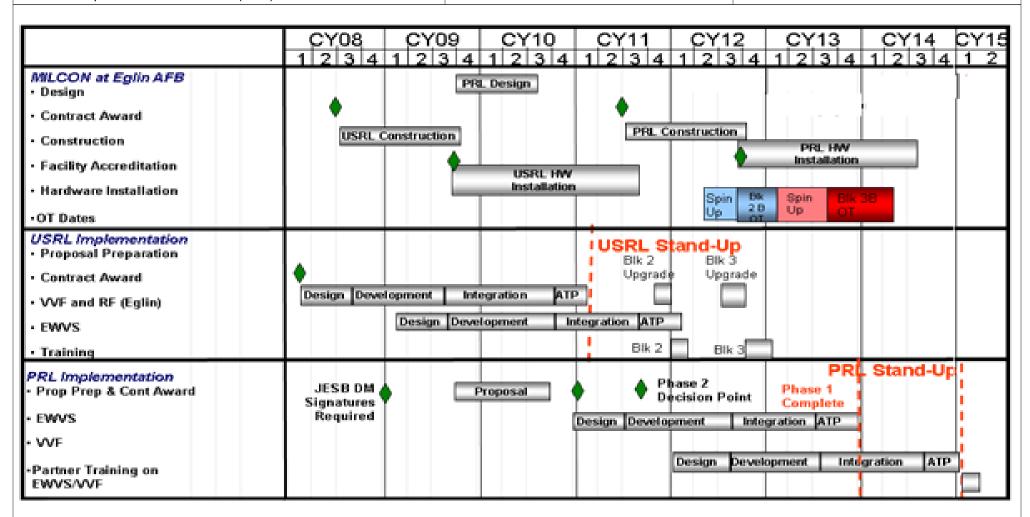
BA 5: Development & Demonstration (SDD)

#### R-1 ITEM NOMENCLATURE

PE 0604800N: JT Strike Fighter (JSF) - EMD

#### **PROJECT**

3194: Joint Reprogramming Center



#### **UNCLASSIFIED**

R-1 Line Item #127 Page 29 of 32

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604800N: JT Strike Fighter (JSF) - EMD

**PROJECT** 

3194: Joint Reprogramming Center

### Schedule Details

	St	art	E	nd
Event	Quarter	Year	Quarter	Year
USRL Design Verification and Validation Facility (WF) and Reprogramming Facility (RF) Work station development, integration, and ready to standup	1	2009	2	2011
Eletronic Warfare Verification Station (EWVS) Design, Development Inegration, and acceptance test	2	2009	2	2012
USRL Standup	2	2011	2	2011
Blk 2 Upgrade (WF and RF)	1	2012	1	2012
Blk 3 Upgrade (WF and RF)	4	2012	4	2012
Blk 2 Training	2	2012	2	2012
Blk 3 Training	1	2013	2	2013

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy
BA 5: Development & Demonstration (SDD)

FY 2010

FY 2010

FY 2010

FY 2010

FY 2010

FY 2011

FY 2011

FY 2011

FY 2012

FY 2013

FY 2014

FY 2015

Cost To

Total

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
9999: Congressional Adds	216.014	214.108	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	932.868
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

### A. Mission Description and Budget Item Justification

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

Congressional Add

### B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010
Congressional Add: MAINTAIN DEV OF 2ND SOURCE FOR ENGINE	214.418	214.108
FY 2009 Accomplishments:  Maintained Development of 2nd source for F-35 Lightning II engine General Electric/Fighter Engine Team (GE/FET). Funding continues the Fighter Engineering Team (General Electric Rolls Royce) F136 development for a second, interchangeable, JSF engine for competition in production (previously begun in associated Program Elements 0603800F). Efforts include technical technology maturation, engine testing, autonomic logistics and integration.		
FY 2010 Plans: Continue development of 2nd source for F-35 Lightning II engine General Electric/Fighter Engine Team (GE/FET). Funding continues the Fighter Engineering Team (General Electirc Rolls Royce) F136 development for a second, interchangeable, JSF engine for competition in production (previously begun in associated Program Elements 0603800F). Efforts include technical technology maturation, engine testing, autonomic logistics and integration.		
Congressional Add: F-35B Lift Fan Component Manurfacturing	1.596	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
1319: Research, Development, Test & Evaluation, Navy	PE 0604800N: JT Strike Fighter (JSF) - EMD	9999: Congressional Adds	
BA 5: Development & Demonstration (SDD)			

### B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	
FY 2009 Accomplishments: Continued design, develop, fabricate test, manage and qualify the F135 Propulsion System and Engine Interchangeability common hardware for the F-35 Aircraft U.S. Navy FY09 Funding			
Congressional Adds Subtotals	216.014	214.108	

### C. Other Program Funding Summary (\$ in Millions)

N/A

### D. Acquisition Strategy

N/A

### **E. Performance Metrics**

Congressional adds.