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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force	Date: February 2019
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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 0207142F / <i>F-35 Squadrons</i>							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	399.460	325.224	503.928	99.943	0.000	99.943	132.471	70.160	36.121	15.597	Continuing	Continuing
675346: <i>F-35</i>	351.791	291.080	426.494	11.850	0.000	11.850	7.693	4.948	4.196	3.745	Continuing	Continuing
675349: <i>HPSI</i>	0.000	0.000	0.000	16.754	0.000	16.754	18.449	19.884	20.282	0.000	0.000	75.369
676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>	47.669	34.144	77.434	71.339	0.000	71.339	106.329	45.328	11.643	11.852	Continuing	Continuing

Program MDAP/MAIS Code: 198

A. Mission Description and Budget Item Justification

The F-35 Joint Strike Fighter (JSF) Program will develop and field an affordable, highly common family of next generation strike aircraft for the United States Air Force, United States Navy, United States Marine Corps and International Partners countries. There are three variants: the F-35A Conventional Takeoff and Landing variant; the F-35B Short Take Off and Vertical Landing variant; and the F-35C Aircraft Carrier suitable variant. Maximum commonality among the variants, consistent with National Disclosure Policy, will minimize total air system life cycle costs. Planning and pre-development systems engineering for Block 4 continues as Initial Operational Capability (IOC) is met for each variant during System Development and Demonstration (SDD).

Beginning in FY 2020, Continuous Capability Development & Delivery (C2D2) efforts designated as Block 4 that are not USAF-unique (US Service and International Partner common requirements) are requested in PE 0604840F. Remaining funding in PE 0207142F supports USAF-unique on-going User Information Data Exchange Service (UIDES), Seek Eagle, Hybrid Product Support Integrator (HPSI) and Dual Capable Aircraft (DCA) requirements. These continuing efforts are not new starts.

JSF C2D2 efforts provide incremental warfighting capability improvements to maintain joint air dominance against evolving threats. Requirements designated as Block 4 include a robust weapons integration portfolio and provide new opportunities for International Partners to assess, integrate, and field unique capabilities based on global sovereign requirements. Additionally, the F-35 JSF Operational Requirements Document (ORD) calls for the F-35A to have the capabilities and provisions for DCA operations in the first post-SDD block upgrade. DCA refers to the capability to carry and deliver conventional and non-conventional weapons. DCA operations for the F-35A is internal carriage of up to two B-61s. Due to extensive certification requirements, the DCA capability planning and design, testing and certification will continue throughout Block 4. Funding in this PE will resource the following F-35A DCA activities: development, analysis, test, integration, certification and risk-reduction activities necessary to field and maintain F-35A DCA capabilities throughout post-SDD block upgrades; assessment of DCA weapon integration and certification impacts on the JSF aircraft; identification and mitigation of potential technical and cost risks; definition of integration and certification trade-space to field the DCA capability with the B61-12 weapon; follow-on risk reduction efforts to ensure future integration alignment with the earliest feasible post-SDD block upgrade; full integration efforts pending Service decisions. This is not a new start effort.

The Air Force SEEK EAGLE Office (AFSEO) is the AF organization chartered to perform the compatibility mission and manage the compatibility enterprise. AFSEO delivers warfighting capability through aircraft/store compatibility testing and evaluation and provides accurate combat weapon delivery and mission planning software.

UNCLASSIFIED

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Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons
Beginning in FY20, the USAF will support FTI wiring and weapons integration tasks related to SEEK EAGLE requests. These tasks include, but are not limited to, envelope expansion, mixed loads testing, and adding additional stores. This is not a new start effort.		
The F-35 HPSI's primary role is to integrate support across the supply chain, maintenance, sustainment engineering, logistics information technology and training disciplines. It will deliver enduring, global support for fielded F-35s while preparing for future force expansion. USAF only will fund additional PMA to transition to a final HPSI, which will support sustainment analysis with product support managers, focused on long-term strategic planning and transition to a final integrated support plan. This is not a new start effort.		
USAF F-35 UIDES provides for Air Force development of a F-35 Autonomic Logistics Information System (ALIS) - UIDES that supports current and future Information Exchange Requirement (IER) data transfer capability from the F-35 ALIS into data reports and configurable tables to receive, store and integrate F-35 operations, maintenance, training and financial data within existing Air Force enterprise views and systems to support the growing fleet of AF F-35 aircraft, the ability to feed F-35 training and operations data to ALIS, and support modification of an enhanced data sharing capability (ability to consume increased volume and variety of ALIS IER data) to support operations planning, pilot and maintainer training, and depot data configuration and integration requirements. Activities also include studies and analysis to support both current program/project planning and execution and future program/project planning. This is not a new start effort.		
This program element does include necessary civilian pay expenses required to manage, execute, and deliver F-35 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.		
As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.		
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.		

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force				Date: February 2019	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		PE 0207142F I F-35 Squadrons			
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	334.530	549.501	598.498	0.000	598.498
Current President's Budget	325.224	503.928	99.943	0.000	99.943
Total Adjustments	-9.306	-45.573	-498.555	0.000	-498.555
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-45.573			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-9.306	0.000			
• Other Adjustments	0.000	0.000	-498.555	0.000	-498.555
Change Summary Explanation					
FY18: reduced -\$9.306M for SBIR/FFRDC					
FY19: reduced -\$45.573 by Congress for excess growth					
FY20: USAF Common Block 4 funding moved in FY20 from PE 0207142F to PE 0604840F. Funding remaining in PE 0207142F will resource USAF unique UIDES, Seek Eagle, and DCA requirements.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
675346: F-35	351.791	291.080	426.494	11.850	0.000	11.850	7.693	4.948	4.196	3.745	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Total cost, including International partner contributions, USN, USMC, and USAF funding: FY2018 \$725.610M; FY19 \$1,098.362M; FY20 USAF only \$11.850M. Other ongoing efforts previously included in this PE continue in PE 0604840F.

F-35 C2D2 Includes:

FY13-19 PE 0207142F BPAC 675346, 675349

FY20: USAF PE 0604840F BPAC 675346

FY13: USN PE 0604800N Project Unit 2261

FY14: USN PE 0604800N Project Unit 9999

FY15-18: USN PE 0604810N Project Unit 2936

FY19: USN PE 0604840N Project Unit 2936

FY13: USMC PE 0604800M Project Unit 2262

FY14: USMC PE 0604800M Project Unit 9999

FY15-18: USMC PE 0604810M Project Unit 2935

FY19: USMC PE 0604840M Project Unit 3410

International Partner Contributions

A. Mission Description and Budget Item Justification

The Air Force SEEK EAGLE Office (AFSEO) is the AF organization chartered to perform the compatibility mission and manage the compatibility enterprise. AFSEO delivers warfighting capability through aircraft/store compatibility testing and evaluation and provides accurate combat weapon delivery and mission planning software. Beginning in FY20, the USAF will support FTI wiring and weapons integration tasks related to SEEK EAGLE requests. These tasks include, but are not limited to, envelope expansion, mixed loads testing, and adding additional stores.

USAF F-35 UIDES provides for Air Force development of a F-35 Autonomic Logistics Information System (ALIS) - UIDES that supports current and future Information Exchange Requirement (IER) data transfer capability from the F-35 ALIS into data reports and configurable tables to receive, store and integrate F-35 operations, maintenance, training and financial data within existing Air Force enterprise views and systems to support the growing fleet of AF F-35 aircraft, the ability to feed F-35 training and operations data to ALIS, and support modification of an enhanced data sharing capability (ability to consume increased volume and variety of ALIS IER data) to support operations planning, pilot and maintainer training, and depot data configuration and integration requirements.

Neither the Seek Eagle nor UIDES effort is a new start.

UNCLASSIFIED

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675346 / F-35		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
<p>Title: Block 4 Planning and System Engineering</p> <p>Description: Block 4 Planning and Systems Engineering preliminary design and delta Systems Requirements Review (SRR) for all variants of the F-35 Aircraft. Modernization efforts are the Requirements Decomposition of capabilities for the entire Block 4 upgrade to include Sub-blocks 4.1 and 4.2. This is a continuation of the previous Block 4 Requirements Decomposition effort which will include activities leading up to a successful test and evaluation. Included in Block 4 are upgraded capabilities and continuous improvements to maintain Air System viability against evolving threats indicated in the Electronic Warfare Initial Capabilities Document (ICD), the Fifth Generation Fighter Modernization ICD, and the Block 4 Capability Development Document (CDD), reduce life cycle cost, and improve operational suitability. Expected completion of a Block 4.1 Preliminary Design Review (PDR) and a Block 4.2 SRR will address additional Block 4 capabilities requirements. Post-PDR risk reduction, preplanning for subsequent Block 4 Modernization events, and investments to deliver the full Block 4 Air System capabilities are included.</p> <p>Beginning in FY20, the USAF unique ALIS User Information Data Exchange Service (UIDES) requirement will be broken out separately from the remaining systems engineering. USAF F-35 UIDES provides for Air Force development of a F-35 Autonomic Logistics Information System (ALIS) - User IT Data Exchange Service (UIDES) that supports current and future Information Exchange Requirement (IER) data transfer capability from the F-35 ALIS into data reports and configurable tables to receive, store and integrate F-35 operations, maintenance, training and financial data within existing Air Force enterprise views and systems to support the growing fleet of AF F-35 aircraft, the ability to feed F-35 training and operations data to ALIS, and support modification of an enhanced data sharing capability (ability to consume increased volume and variety of ALIS IER data) to support operations planning, pilot and maintainer training, and depot data configuration and integration requirements. Activities also include studies and analysis to support both current program/project planning and execution and future program/project planning.</p> <p>FY 2019 Plans: Continue Block 4 Phase II contract development. Conduct Block 4 SRR and PDR activities as well as continue risk reduction and planning. Continuing development and maturity of key long lead capabilities and service unique weapons. Begin Developmental Flight Test of initial Block 4 capabilities.</p> <p>FY 2020 Plans: Continue to support/develop companion USAF F-35 UIDES projects to support the IER updates and related new functionality.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Funding previously programmed for this on-going effort has moved to the Common Block 4 requirements PE 0604840F beginning in FY20. USAF-unique UIDES funding remains in 0207142F.</p>		197.314	213.559	2.550
<p>Title: Technology Refresh 3 (TR-3)</p> <p>Description: Technology Refresh 3 (TR-3) Design Competition, Development, Integration, and Test. This is the design phase of the TR-3 program which fully supports Block 3F functionality and allows incorporation of all Block 4 capabilities documented in the</p>		144.550	98.000	-

UNCLASSIFIED

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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675346 / F-35	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
<p>System Requirements Document (SRD). TR-3 hardware redesign is required to support 4X processing growth factor based on the current processing estimates for all 3F capabilities. Redesign of TR-3 subsystems Integrated Core Processor (ICP), Aircraft Memory System (AMS), and Panoramic Cockpit Display (PCD)) configurations will contain new backplane technology, commercial operating systems, and modified middleware necessary to take the design of the TR-3 System through Critical Design Review (CDR).</p> <p>FY 2019 Plans: The TR-3 program will continue design toward Critical Design Review of the Integrated Core Processor (ICP), Panoramic Cockpit Display (PCD), and Aircraft Memory System (AMS). In addition the TR-3 program will prototype the middleware software that will enable F-35's new messaging architecture delivered as part of TR-3 and ensure compatibility with current F-35 sensors. Additionally the initial lab stand up will occur to ensure timely first article delivery to the production line in FY23.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Common Block 4 requirements moved to PE 0604840F beginning in FY20.</p>			
<p>Title: Infrastructure and Support Costs</p> <p>Description: Funding will support infrastructure investment planning and other test planning activities required for Block 4 development, integration, test and evaluation. Funding related to the Integrated Test Force, government, and contractor labor. Other costs in support of ranges, chase planes and DT site operations.</p> <p>FY 2019 Plans: Continue development support for defining, managing and acquiring the F-35 capability enhancements identified in approved requirements documents. Transfer of integrated test force requirement to C2D2 as F-35 SDD draws to closure. USAF only will fund additional PMA to transition to a final hybrid product support integrator (HPSI) which will support sustainment analysis with product support managers, focused on long term strategic planning and transition to a final integrated support plan. Conduct strategic basing analysis to determine permanent location for core of HPSI.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Common Block 4 requirements moved to PE 0604840F beginning in FY20. HPSI moved to BPAC 675349 (in PE 0207142F) beginning in FY20.</p>		172.641	185.163
<p>Title: Test and Evaluation</p> <p>Description: Developmental Test activities in support of Block 4. Non-recurring engineering required to plan for the service life extension of existing DT aircraft and modification necessary to bring DT aircraft fleet to a more production representative and sustainable configuration. Additional upgrades required to support development and evaluation of improvements driven by changes in the threat environment and as identified in the Electronic Warfare ICD, the Fifth Generation Fighter Modernization ICS, and the Block 4 Capability Development Document (CDD).</p>		211.105	9.300

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
Beginning in FY20, the USAF will support FTI wiring and weapons integration tasks related to Seek Eagle Requests. These tasks include, but aren't limited to, envelope expansion, mixed loads testing, and adding additional stores.					
FY 2019 Plans: Funding will support flight test execution to ensure Block 4 capabilities are delivered as designed. Funding also supports investment planning and prioritization required to maintain future development capabilities. This includes instrumenting new DT aircraft, ordering the replacement of pre-LRIP aircraft engines, continuing the FY18 NRE work, and delivery and install of upgraded hardware as a part of the DT aircraft viability effort. Additionally, this funding supports laboratory upgrades required to support development and verification of capabilities in a relevant environment.					
FY 2020 Plans: USAF only funding will begin supporting Seek Eagle requests by providing FTI wiring and supporting weapons integration tasks.					
FY 2019 to FY 2020 Increase/Decrease Statement: Funding previously programmed for this on-going effort has moved to the Common Block 4 requirements PE 0604840F beginning in FY20. USAF-unique UIDES funding remains in 0207142F.					
Title: Autonomic Logistics Information System (ALIS) Development Description: Autonomic Logistics Information System (ALIS) continues to deliver the core logistics infrastructure requirements for the F-35 enterprise. ALIS includes features such as aircraft scheduling, training delivery and record keeping, technical data delivery, supply chain management, maintenance management, pilot and maintenance debriefing and mission planning. The ALIS development program is focused on two primary lines of effort: current ALIS which includes Agile DevOps and ALIS Next. Current ALIS is focused on developing new software that uses the current software as a baseline. Upcoming software releases include 3.5, 3.6 and 3.7 builds. The required new capabilities have been defined by the US Services and include cybersecurity updates, decentralized maintenance, Prognostic Health Monitoring (PHM), Training Management System upgrades, Personnel Flight Equipment (PFE), Low Observable Health Assessment System (LOHAS), Corrosion Management System, squadron resource sharing, and new propulsion capabilities. All aspects of ALIS software are included in current ALIS development. The software development will have applicability to the Standard Operating Units (SOU) Central Points of Entry (CPE), and the Autonomic Logistics Operating Unit (ALOU) for both classified and unclassified hardware. Under the umbrella of current ALIS, an Agile DevOps pilot is working to rapidly deliver capability updates to the fleet and change the way that current ALIS delivers software.			0.000	120.926	0.000
FY 2019 Plans:					

UNCLASSIFIED

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Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2018	FY 2019	FY 2020
Continue Current ALIS software development efforts and deliver ALIS build 3.5, which contains critical software stabilization improvements. Current ALIS efforts will also continue to transition to a pure Agile DevOps development framework. ALIS Next efforts will produce a reference architecture and a detailed transition plan to the new architecture.												
FY 2020 Plans: N/A												
FY 2019 to FY 2020 Increase/Decrease Statement: Funding for this ongoing effort moved to PE 0604840F beginning FY20.												
Accomplishments/Planned Programs Subtotals										725.610	1,098.362	11.850
Other Service Funding Adjustment										434.530	671.868	-
Air Force Subtotals										291.080	426.494	11.850
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost	
• RDTE 07 0604840F: F-35 C2D2	0.000	0.000	694.455	-	694.455	786.513	550.100	451.737	522.023	Continuing	Continuing	
• RDTE 07 PE 0207142F	34.145	77.434	71.339	-	71.339	103.329	45.328	11.643	11.852	Continuing	Continuing	
6011: Dual Capable Aircraft (DCA), BPAC 676011												
• RDTE 05 PE 0604810N	138.308	-	-	-	-	-	-	-	-	0.000	138.308	
2936: F-35C Follow-on Modernization (CV)												
• RDTE 07 PE 0604840N	-	227.998	383.741	-	383.741	351.536	263.066	252.898	245.204	Continuing	Continuing	
2936: F-35C Follow-on Modernization (CV)												
• RDTE 05 PE 0604810M	139.369	-	-	-	-	-	-	-	-	0.000	139.369	
2935: F-35B Follow-on Modernization (STOVL)												
• RDTE 07 PE 0604840M	-	234.107	422.881	-	422.881	373.365	313.601	283.357	270.845	Continuing	Continuing	
3410: F-35B Follow-on Modernization (STOVL)												
• RDTE International: International FoM	157.042	209.763	281.887	-	281.887	339.139	224.501	189.728	158.811	Continuing	Continuing	

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / <i>F-35 Squadrons</i>	Project (Number/Name) 675346 / <i>F-35</i>	

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

<u>Line Item</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u> <u>Base</u>	<u>FY 2020</u> <u>OCO</u>	<u>FY 2020</u> <u>Total</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

This is a joint program with no executive service. Service Acquisition Executive (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Air Force.

Program Element 0604800N/0604800M continues USN development efforts budgeted in 0603800N prior to FY2002. The United Kingdom, Italy, Netherlands, Turkey, Canada, Australia, Denmark, and Norway are participants in the SDD phase of JSF.

PE 0604810M/N ends in FY18 and continues in PE 0604840M/N as budget moves from BA05 to BA07.

PE 0207142F common Block 4 requirements moved in FY20 to PE 0604840F to separate USAF unique requirements.

D. Acquisition Strategy

The C2D2 acquisition strategy is to employ both Cost and Fixed Price Incentive contracts for the Block 4 engineering and development efforts. A new modernization contract structure will be established for all post SDD Block 4 efforts. In addition, a separate Basic Ordering Agreement or Indefinite Quantity/Indefinite Delivery contract is planned to provide a long term approach to upgrading and maintaining laboratories and test aircraft and supporting technology maturation for future C2D2 capabilities. The F-35 Acquisition Strategy is currently being updated to add a section regarding C2D2.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force **Date:** February 2019

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675346 / F-35
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Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prime LM 18-C-1004 PHASE II	SS/CPFF	Lockheed Martin : Ft Worth, TX	28.140	198.478	Apr 2018	142.759	Dec 2018	-		-		-	1,031.289	1,400.666	1,614.161
Prime LM 14-G-0020 TR3	C/CPFF	Lockheed Martin : Ft Worth, TX	96.837	142.952	Mar 2018	98.000	Dec 2018	-		-		-	510.000	847.789	878.558
Prime LM BOA 0020 (Nimble Lightning+Pilot Training)	C/CPFF	Lockheed Martin : Ft Worth, TX	4.706	4.250	Mar 2018	4.500	Mar 2019	-		-		-	17.500	30.956	31.216
Prime LM Flight Test Asset	Various	Various : TBD	0.000	37.548	Jul 2018	139.110	Jan 2019	-		-		-	406.000	582.658	528.894
Prime LM IDIQ (ECASE)	SS/CPFF	Lockheed Martin : Ft Worth, TX	0.000	5.000	Jun 2018	-		-		-		-	168.000	173.000	253.520
Prime LM TBD DT AC Viability	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	40.000	Mar 2018	32.750	Jan 2019	-		-		-	415.000	487.750	580.305
Prime PW Propulsion	SS/CPFF	Pratt Whitney : TBD	0.000	0.000		136.000	Feb 2019	-		-		-	220.000	356.000	269.450
Prime LM Infrastructure	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	26.312	Sep 2018	75.800	Nov 2018	-		-		-	345.000	447.112	445.550
Prime LM TBD JRE	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	7.500	Sep 2018	35.000	Dec 2018	-		-		-	0.000	42.500	-
ALIS Re-Architecture/Next/ALIS Dev	C/CPFF	Lockheed Martin : Ft Worth, TX	0.000	0.000		66.411	Jan 2019	-		-		-	0.000	66.411	-
System Engineering	C/CPFF	Lockheed Martin : Ft Worth, TX	5.342	17.800	Feb 2018	31.300	Jan 2019	-		-		-	0.000	54.442	-
Prior Year no longer funded in FYDP	Various	Various : TBD	144.540	-		-		-		-		-	0.000	144.540	144.540
Subtotal			279.565	479.840		761.630		-		-		-	3,112.789	4,633.824	N/A

Remarks
 Combined ECASE contract line into Systems Engineering line to delete duplicative line items as ECASE contract is a vehicle used for Systems Engineering efforts.
 Block 4 Modernization on R-2A includes Phase II, Nimble Lightning, JRE, ALIS Re-arch, & Systems Engineering.
 Flight Test assets include weapons to support Test and assets needed for flight test instrumentation.
 Broke out Prime LM TBD JRE line & ALIS Re-arch lines seperately from Block 4 Phase II contract line due to change in contracting strategy.
 Broke out USAF UIDES requirement from systems engineering for visibility.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force **Date:** February 2019

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675346 / F-35
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Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NAWC Paxutent River	WR	NAWCAD : Paxutent River, MD	16.098	8.550	Dec 2017	32.400	Dec 2018	-		-		-	Continuing	Continuing	-
NAWC China Lake	WR	NAWCWD : China Lake, CA	1.029	2.550	Dec 2017	6.275	Dec 2018	-		-		-	43.083	52.937	-
Edwards Air Force Base	Various	Edwards AFB : Various	0.986	0.500	Dec 2017	0.000		-		-		-	14.175	15.661	-
AFFTC / Eglin AFB	Various	Eglin : Various	2.265	3.450	Jan 2018	3.500	Dec 2018	-		-		-	15.268	24.483	-
AFLCMC/Wright Patterson AFB	MIPR	AFLCMC : Wright Patterson AFB, OH	1.286	1.125	Dec 2017	3.978	Dec 2018	-		-		-	13.923	20.312	-
Development Support	Various	Various : TBD	16.585	15.144	Dec 2017	22.212	Dec 2018	-		-		-	34.513	88.454	-
JRE Development Support	Various	Various : TBD	0.000	23.520	Jan 2018	18.300	Dec 2018	-		-		-	0.000	41.820	-
ALIS Development Support	Various	Various : TBD	0.000	10.739	Jan 2018	54.515	Dec 2018	-		-		-	0.000	65.254	-
USAF Seek Eagle	Various	Various : TBD	0.000	-		-		9.300	Mar 2020	-		9.300	0.000	9.300	-
USAF UIDES	Various	Various : TBD	0.000	-		-		2.550	Feb 2020	-		2.550	0.000	2.550	-
Subtotal			38.249	65.578		141.180		11.850		-		11.850	Continuing	Continuing	N/A

Remarks

Broke out JRE and ALIS Development Support from Block 4 Phase II contract line due to change in contracting strategy.

Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NAWC Paxutent River	WR	Various : Paxutent River, MD	0.000	37.500	Feb 2018	54.000	Dec 2018	-		-		-	174.872	266.372	-
NAWC China Lake	WR	NAWCWD : China Lake, CA	0.000	10.350	Feb 2018	6.500	Dec 2018	-		-		-	40.470	57.320	-
Edwards/AFB	MIPR	Edwards AFB : Edwards AFB, CA	0.000	11.575	Feb 2018	26.554	Dec 2018	-		-		-	110.470	148.599	-
Developmental Test & Evaluation	Various	Various : TBD	0.000	10.250	Feb 2018	3.500	Dec 2018	-		-		-	57.087	70.837	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675346 / F-35					
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Not specified.	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
AFOTEC	MIPR	AFOTEC : Kirtland AFB, NM	2.700	1.800	Feb 2018	6.500	Dec 2018	-		-		-	72.500	83.500	-
Subtotal			2.700	71.475		97.054		-		-		-	455.399	626.628	N/A
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AFLCMC Civilian Pay	Various	AFLCMC CIV PAY : Wright Patterson AFB, OH	29.377	35.900	Oct 2017	42.885	Oct 2018	-		-		-	231.610	339.772	-
HPSI Program Sppt	Various	AFLCMC : Wright Patterson AFB, OH	0.000	10.225	Oct 2017	9.600	Oct 2018	-		-		-	0.000	19.825	-
Financial Mgmt Database Support IDS	C/CPAF	IDS : Arlington, VA	0.000	0.800	Jan 2018	1.300	Dec 2018	-		-		-	4.301	6.401	-
Earned Value/Finance/ Cost ACT-I	C/CPAF	ACT-I : Arlington, VA	0.000	4.500	Jan 2018	4.079	Dec 2018	-		-		-	23.518	32.097	-
CIO BOS	C/CPAF	Various : TBD	0.000	7.801	Jan 2018	-		-		-		-	95.066	102.867	-
Systems System High BOS	Various	Various : TBD	0.000	10.238	Jan 2018	8.532	Dec 2018	-		-		-	45.342	64.112	-
Other CIO Services	Various	Not specified. : TBD	0.000	10.629	Jan 2018	0.404	Dec 2018	-		-		-	22.579	33.612	-
Other Core Civ Pay	Various	NAWCAD/WD : TBD	0.000	20.372	Dec 2017	21.685	Dec 2018	-		-		-	0.000	42.057	-
Other Core Contractor Sppt	C/CPAF	Not specified. : TBD	0.000	5.113	Dec 2017	6.437	Dec 2018	-		-		-	0.000	11.550	-
Travel	Various	Not specified. : TBD	1.900	3.139	Oct 2017	3.576	Oct 2018	-		-		-	8.569	17.184	-
Subtotal			31.277	108.717		98.498		-		-		-	430.985	669.477	N/A
Remarks															
Breaking out HPSI AFLCMC funding from AFLCMC Civilian Pay line for visibility.															
Added Other Core Civ Pay & Other Core Contractor Sppt to account for program operations support.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force **Date:** February 2019

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / <i>F-35 Squadrons</i>	Project (Number/Name) 675346 / <i>F-35</i>
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	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Subtotals	351.791	725.610	1,098.362	11.850	-	11.850	Continuing	Continuing	N/A
Other Service Funding Adjustment	-	434.530	671.868	-	-	-			-
Project Cost Totals	351.791	291.080	426.494	11.850	-	11.850	0.000	0.000	-

Remarks

The Project information shown here reflects USN, USMC, USAF and International Partner funding total for each contract. By agreement, USN and USMC funding shares are approximately equal and when combined are equal to the USAF share. Partner funding share is based upon future aircraft procurement numbers updated annually in accordance with the Production, Sustainment, C2D2 (formerly Follow-on Modernization (FoM)) Memorandum of Agreement.

Subtotals and totals may not add due to rounding.

Prior Year reflects \$124.113M USAF/\$55.327M USN/\$59.417M USMC/\$112.934M International/Total \$351.791M
FY 2018 reflects \$291.080M USAF/\$138.308M USN/\$139.369M USMC/\$157.042M International/Total \$725.610M
FY 2019 reflects \$426.494M USAF/\$227.998M USN/\$234.107M USMC/\$209.763M International/Total \$1,098.365M
FY20 reflects \$11.850M USAF only; remaining efforts continue in PEs 0604840F/M/N

F-35 C2D2 Includes:

FY13-19: PE 0207142F BPAC 675346
FY20: USAF PE 0604840F BPAC 675346
FY13: USN PE 0604800N Project Unit 2261
FY14: USN PE 0604800N Project Unit 9999
FY15-18: USN PE 0604810N Project Unit 2936
FY19: USN PE 0604840N Project Unit 2936
FY13: USMC PE 0604800M Project Unit 2262
FY14: USMC PE 0604800M Project Unit 9999
FY15-18: USMC PE 0604810M Project Unit 2935
FY19: USMC PE 0604840M Project Unit 3410
International Partner Contributions

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force						Date: February 2019					
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)			
3600 / 7				PE 0207142F / F-35 Squadrons				675346 / F-35			

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
F-35 UIDES and Seek Eagle																												
Ongoing support activities																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675346 / F-35

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
F-35 UIDES and Seek Eagle				
Ongoing support activities	1	2018	4	2024

Note
Schedule for Block 4 efforts reflected in FY19 and continuing in PE 0604840F is depicted in R-4/R-4A exhibits for PE 0604840F

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 675349 / HPSI			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
675349: HPSI	0.000	0.000	0.000	16.754	0.000	16.754	18.449	19.884	20.282	0.000	0.000	75.369
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification <p>The F-35 Hybrid Product Support Integrator's (HPSI's) primary role is to integrate support across the supply chain, maintenance, sustainment engineering, logistics information technology and training disciplines. It will deliver enduring, global support for fielded F-35s while preparing for future force expansion. USAF only will fund additional PMA to transition to a final HPSI, which will support sustainment analysis with product support managers, focused on long-term strategic planning and transition to a final integrated support plan.</p> <p>Funding for HPSI was previously programmed for in PE 27142F/BPAC 675346. This is not a new start.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020	
Title: Hybrid Product Support Integrator (HPSI) Effort Description: The F-35 Hybrid Product Support Integrator (HPSI) will integrate support across the supply chain, maintenance, sustainment engineering, logistics information technology and training disciplines. It will deliver enduring, global support for fielded F-35s while preparing for future force expansion. FY 2019 Plans: N/A FY 2020 Plans: The F-35 Hybrid Product Support Integrator (HPSI) will integrate support across the supply chain, maintenance, sustainment engineering, logistics information technology and training disciplines. AFLCMC Civilian Pay, contractor support, and travel funding support the above efforts. FY 2019 to FY 2020 Increase/Decrease Statement: Funding for HPSI in FY19 and prior was previously programmed in PE 27142F / BPAC 675346.									0.000	0.000	16.754	
Accomplishments/Planned Programs Subtotals									0.000	0.000	16.754	
C. Other Program Funding Summary (\$ in Millions) N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / <i>F-35 Squadrons</i>	Project (Number/Name) 675349 / <i>HPSI</i>
C. Other Program Funding Summary (\$ in Millions)		
Remarks HPSI is an effort supporting F-35, a joint program with no executive service. Service Acquisition Executive (SAE) authority alternates between the Department of the Navy and the Department of the Air force and currently resides with the Air Force.		
D. Acquisition Strategy The HPSI will deliver enduring, global support for fielded F-35s, integrating sustainment support across the supply chain, maintenance sustainment engineering, logistics, information technology and training.		
E. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207142F / <i>F-35 Squadrons</i>						Project (Number/Name) 675349 / <i>HPSI</i>			
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AFLCMC Civilian Pay	Allot	AFLCMC : TBD	0.000	-		-		10.902	Oct 2019	-		10.902	0.000	10.902	-
Other Core Contractor Support	Various	Various : TBD	0.000	-		-		5.279	Oct 2019	-		5.279	0.000	5.279	-
Travel	Various	Various : TBD	0.000	-		-		0.573	Oct 2019	-		0.573	0.000	0.573	-
Subtotal			0.000	-		-		16.754		-		16.754	0.000	16.754	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		0.000		16.754		-		16.754	0.000	16.754	N/A
Remarks															
Prior years reflect no funding because funding for HPSI in prior years was programmed under PE 27142F/BPAC 675346.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force										Date: February 2019			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)			
3600 / 7					PE 0207142F / F-35 Squadrons					675349 / HPSI			

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Hybrid Product Support Integrator																												
Management Support Activities																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675349 / HPSI

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Hybrid Product Support Integrator				
Management Support Activities	1	2019	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
676011: JSF DUAL CAPABLE AIRCRAFT	47.669	34.144	77.434	71.339	0.000	71.339	106.329	45.328	11.643	11.852	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
F-35 C2D2 Includes:												
FY13-19: USAF PE 0207142F BPAC 675346												
FY20: USAF PE 0604840F BPAC 675346												
FY13: USN PE 0604800N Project Unit 2261												
FY14: USN PE 0604800N Project Unit 9999												
FY15-18: USN PE 0604810N Project Unit 2936												
FY19: USN PE 0604840N Project Unit 2936												
FY13: USMC PE 0604800M Project Unit 2262												
FY14: USMC PE 0604800M Project Unit 9999												
FY15-18: USMC PE 0604810M Project Unit 2935												
FY19: USMC PE 0604840M Project Unit 3410												
International Partner Contributions												
F-35 DCA Includes:												
USAF PE 0207142F BPAC 676011												
A. Mission Description and Budget Item Justification												
The F-35 Joint Strike Fighter (JSF) Operational Requirements Document (ORD) calls for the F-35A variant to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations in the first post SDD block upgrade. DCA refers to the capability to carry and deliver conventional and non-conventional weapons. DCA operation for the F-35A is internal carriage of either one or two B-61-12 weapons.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020	
Title: Dual Capable Aircraft (DCA) (F-35 JSF)									34.144	77.434	71.339	
Description: This effort provides for the assessment of Dual Capable Aircraft (DCA) weapon integration and certification impacts on the Joint Strike Fighter (JSF) aircraft. It identifies and mitigates potential technical and cost risks, as well as defines the integration and certification trade-space to field the DCA capability with the B61-12 weapon. This effort also supports follow-on risk												

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force									Date: February 2019		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2018	FY 2019	FY 2020
reduction efforts that will ensure future integration alignment with the earliest feasible post-SDD block upgrade, and is expected to include full integration efforts pending Service decisions.											
FY 2019 Plans: Continue execution of the Phase 2 Block 4 contract executing: Early DCA Software Development and resource recovery, Development of the Preliminary EICD and MICD, continued NSAR and PDR development, IV&V Plan Development Survivability Analysis, FRIU upgrade development and production, Wiring Mods for additional Mission Select Switch and Nuclear Consent Switch, DT aircraft Mod Kits. Conduct early flight science testing of B61-12 (i.e. Environmental, Loads and separation testing and analysis). F-35A is an objective platform and maintains responsibility for integration/certification costs of the B61-12; as such, the program will continue to resource planning and execution for integration/certification of B61-12 on F-35A.											
FY 2020 Plans: Continue execution of the Phase 2 C2D2 contract, completing: DCA Software Development, Separation Flight Testing, Mission System Flight Testing, and Preliminary AMAC Testing. The NSAR, TNSA, MICD, and EICD documentation for the initial nuclear certification will be completed. Delta Nuclear Certification activities will ramp up in order to certify Lot 14 F-35As, that contain additional DCA hardware and software, as well as Lot 15 F-35As which comprises of a major hardware upgrade, TR-3. In FY20, the initial nuclear certification hardware and software development and testing is finished by the prime contractor, Lockheed Martin. At this point the capability is considered MFR (Military Flight Release) complete and ready for graduation certification events in FY21.											
FY 2019 to FY 2020 Increase/Decrease Statement: Increase of \$6.095M; see above for details.											
Accomplishments/Planned Programs Subtotals									34.144	77.434	71.339
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• RDTE 07 PE 0207142F 5346: JSF Follow on Modernization, BPAC 675346	291.080	426.494	11.850	-	11.850	7.693	4.948	4.196	3.745	Continuing	Continuing
• RDTE 07 0604840F: F-35 C2D2	-	-	694.455	-	694.455	786.513	550.100	451.734	522.023	Continuing	Continuing
• RDTE 05 PE 0604810N 2936: F-35C Follow on Modernization (CV)	138.308	-	-	-	-	-	-	-	-	0.000	138.308

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force										Date: February 2019	
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• RDTE 07 PE 0604840N 2936: F-35C Follow on Modernization (CV)	-	227.998	383.741	-	383.741	351.536	263.066	252.898	245.204	Continuing	Continuing
• RDTE 05 PE 0604810M 2935: F-35B Follow-on Modernization (STOVL)	139.369	-	-	-	-	-	-	-	-	0.000	139.369
• RDTE 07 PE 0604840M 3410: F-35B Follow-on Modernization (STOVL)	-	234.107	422.881	-	422.881	373.365	313.601	283.357	270.845	Continuing	Continuing
• RDTE International: International FOM	157.042	209.763	281.887	-	281.887	339.139	224.501	189.728	158.811	Continuing	Continuing
Remarks											
Service Acquisition Executive (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Air Force.											
Program Element 0604800N/M continues USN development efforts budgeted in 0603800N prior to FY2002.											
The United Kingdom, Italy, Netherlands, Turkey, Canada, Australia, Denmark and Norway are international participants in the SDD and C2D2 phases of JSF.											
Department of Navy funding in PEs 0604810N/M in FY18 and prior continue in 0604840N/M as the budget moved from BA05 to BA07.											
D. Acquisition Strategy											
The DCA effort will leverage contracting vehicles for the overall Block 4 F-35 C2D2 effort. The C2D2 acquisition strategy is to employ both Cost and Fixed Price Incentive contracts for the Block 4 engineering and development efforts. A new modernization contract structure will be established for all post SDD Block 4 efforts. In addition, a separate Basic Ordering Agreement or Indefinite Quantity/Indefinite Delivery contract is planned to provide a long term approach to upgrading and maintaining laboratories and test aircraft and supporting technology maturation for future C2D2 capabilities.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force **Date:** February 2019

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT
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Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 4 Phase 1 - DCA Requirements Decomposition	SS/CPFF	Lockheed Martin : Ft. Worth, TX	18.072	3.500	Sep 2018	-		-		-		-	Continuing	Continuing	-
Block 4 Phase 2.1 - DCA to PDR	SS/CPFF	Lockheed Martin : Ft. Worth, TX	4.000	4.080	Aug 2018	19.990	Jan 2019	-		-		-	Continuing	Continuing	-
Block 4 Phase 2.3 - DCA to DT Complete	SS/CPFF	Lockheed Martin : Ft. Worth, TX	0.000	4.515	Oct 2018	19.730	Feb 2019	32.200	Feb 2020	-		32.200	Continuing	Continuing	-
Delta Certification	SS/CPFF	Lockheed Martin : Ft. Worth, TX	0.000	-		10.664	Jun 2019	15.839	Mar 2020	-		15.839	Continuing	Continuing	-
Prior Year - no longer funded in FYDP	Various	Not specified. : TBD	1.739	-		-		-		-		-	0.000	1.739	-
Prior Year - Block 4 Realignment	C/CPAF	Not specified. : TBD	14.676	-		-		-		-		-	0.000	14.676	-
Subtotal			38.487	12.095		50.384		48.039		-		48.039	Continuing	Continuing	N/A

Remarks
FY17 has not been updated for actuals in official budgetary systems to reflect FY17 movement from BPAC 676011 to 675346 (total \$14.676M)

Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
B61-12/F-35 Certification	Various	Various : TBD	6.207	20.149	Mar 2018	21.340	Feb 2019	17.040	Feb 2020	-		17.040	Continuing	Continuing	-
Tail-kit Program Office	MIPR	TKA SPO : Eglin AFB, FL	0.000	1.900	Sep 2018	3.300	Feb 2019	4.900	Feb 2020	-		4.900	Continuing	Continuing	-
AFNWC/AFSEC Support	MIPR	Various : TBD	1.360	-		2.410	Feb 2018	1.360	Feb 2020	-		1.360	Continuing	Continuing	-
Prior Year - no longer funded in FYDP	Various	Various : TBD	0.791	-		-		-		-		-	0.000	0.791	-
Subtotal			8.358	22.049		27.050		23.300		-		23.300	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons				Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT					
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year - no longer funded in FYDP	Various	Not specified. : TBD	0.824	-		-		-		-		-	0.000	0.824	-
Subtotal			0.824	-		-		-		-		-	0.000	0.824	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			47.669	34.144		77.434		71.339		-		71.339	Continuing	Continuing	N/A
Remarks															
F-35 C2D2 Includes: USAF PE 0207142F BPAC 675346 FY13: USN PE 0604800N Project Unit 2261 FY14: USN PE 0604800N Project Unit 9999 FY15-18: USN PE 0604810N Project Unit 2936 FY19: USN PE 0604840N Project Unit 2936 FY13: USMC PE 0604800M Project Unit 2262 FY14: USMC PE 0604800M Project Unit 9999 FY15-18: USMC PE 0604810M Project Unit 2935 FY19: USMC PE 0604840M Project Unit 3410 International Partner Contributions F-35 DCA Includes: USAF PE 0207142F BPAC 676011															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force										Date: February 2019			
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons					Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT			

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
676011: JSF Dual Capable Aircraft																												
Nuclear Certification - NNSA & TKA SPO																												
Phase 1 (Nuclear Certification Tasks) Requirements Decomposition																												
Phase 2.1 (Nuclear Certification Tasks) DCA to Preliminary Design Review (PDR)																												
Phase 2.3 (Nuclear Certification Tasks) DCA to DT Complete																												
Delta Certification of Hardware/Software Upgrades																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / <i>F-35 Squadrons</i>	Project (Number/Name) 676011 / <i>JSF DUAL CAPABLE AIRCRAFT</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
676011: JSF Dual Capable Aircraft				
Nuclear Certification - NNSA & TKA SPO	1	2018	4	2023
Phase 1 (Nuclear Certification Tasks) Requirements Decomposition	1	2018	2	2019
Phase 2.1 (Nuclear Certification Tasks) DCA to Preliminary Design Review (PDR)	1	2018	4	2021
Phase 2.3 (Nuclear Certification Tasks) DCA to DT Complete	3	2018	4	2023
Delta Certification of Hardware/Software Updgrades	3	2019	4	2024

Note

Schedule details reflect fiscal years