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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

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>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	724.684	490.319	99.943	132.229	0.000	132.229	70.054	36.056	15.567	15.853	Continuing	Continuing
675346: <i>F-35</i>	642.871	414.998	11.850	7.678	0.000	7.678	4.940	4.188	3.737	3.806	Continuing	Continuing
675349: <i>HPSI</i>	0.000	0.000	16.754	18.415	0.000	18.415	19.854	20.246	0.000	0.000	0.000	75.269
676011: <i>JSF DUAL CAPABLE AIRCRAFT</i>	81.813	75.321	71.339	106.136	0.000	106.136	45.260	11.622	11.830	12.047	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.

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. 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 is a NATO and US priority which is a critical capability in our collective defense and credible deterrence, with certification needed by Jan 2024. 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.

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Beginning in FY2020, 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 User Information Data Exchange Service (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 may 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 element 0605831F

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.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	503.928	99.943	132.471	0.000	132.471
Current President's Budget	490.319	99.943	132.229	0.000	132.229
Total Adjustments	-13.609	0.000	-0.242	0.000	-0.242
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-0.001	0.000			
• SBIR/STTR Transfer	-13.608	0.000			
• Other Adjustments	0.000	0.000	-0.242	0.000	-0.242

Change Summary Explanation

The FY2020 funding reduced for Small Business Innovative Research (SBIR).

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
675346: F-35	642.871	414.998	11.850	7.678	0.000	7.678	4.940	4.188	3.737	3.806	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Total cost, including International partner contributions, USN, USMC, and USAF funding: FY 2019 \$1,062.771M; FY 2020 USAF only \$11.850M; FY 2021 USAF only \$7.678M. Other ongoing efforts previously included in this PE continue in PE 0604840F.

F-35 C2D2 Includes:

PE 0207142F BPAC 675346

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 FY2020, the USAF will support Flight Test Instrumentation (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 User Information Data Exchange Service (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.

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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
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>Title: Block 4 Planning and System Engineering</p> <p>Description: Block 4 Planning and Systems Engineering from preliminarily design and requirements decomposition through completion of Developmental Flight Test for all variants of the F-35 aircraft. Modernization efforts include Requirements Decomposition and continuous development and release of capabilities identified as Block 4 upgrades. This is a continuation of the previous Block 4 developmental contracts, which will include activities leading to successful completion of Developmental Flight Test, to include select facility upgrades required for Block 4 research, development, 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. Continuous risk reduction activities to include Air System Integration, preplanning for subsequent Block 4 Modernization events, and investments to deliver the full Block 4 Air System capabilities as needed. C2D2 capability planning includes an efficient transition from F-35 SDD to C2D2. As SDD development activities ramp down C2D2 will assume responsibility for improvements and modernization efforts.</p> <p>Beginning in FY 2020, 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 2020 Plans: Continue to support/develop companion USAF F-35 UIDES projects to support the IER updates and related new functionality.</p> <p>FY 2021 Base Plans:</p>	319.964	2.550	2.588	0.000	2.588

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B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue to support/develop companion USAF F-35 UIDES projects to support the IER updates and related new functionality. FY 2021 OCO Plans: N/A FY 2020 to FY 2021 Increase/Decrease Statement: Increase due to program growth as USAF F-35 UIDES support and development efforts ramp up.					
Title: Technology Refresh 3 (TR-3) Description: Technology Refresh 3 (TR3) conducts post Critical Design Review (CDR) design activities. This effort will develop and deliver a TR3 system through full flight-worthy certification and production readiness review for Lot 15. The design of TR3 subsystems Integrated Core Processor (ICP), Aircraft Memory System (AMS), and Panoramic Cockpit Display Electronics Unit and Display Unit (PCD-EU, PCD-DU) configurations will contain new backplane technology, commercial operating systems, and modified middleware necessary to support Block 3F functionality and incorporation of all Block 4 capabilities. This work includes nonrecurring engineering for the developing, test, and certification of the ICP, AMS, PCD-EU, and PCD-DU, and is required to support 4x processing growth factor based on the current processing estimated for all 3F capabilities. FY 2020 Plans: N/A FY 2021 Base Plans: N/A FY 2021 OCO Plans: N/A FY 2020 to FY 2021 Increase/Decrease Statement: N/A					
	156.992	0.000	0.000	0.000	0.000
Title: Infrastructure and Support Costs 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. Support efforts for airframe, air vehicle systems, air ship integration, mission systems, weapons integration, offboard mission support, autonomic logistics development, joint reprogramming enterprise and modeling and joint simulation environment activities, including Nimble Lightning efforts. Funding					
	230.384	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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related to the Integrated Test Force, government, and contractor labor. Other costs in support of ranges, chase planes and DT site operations.

FY 2020 Plans:

N/A

FY 2021 Base Plans:

N/A

FY 2021 OCO Plans:

N/A

FY 2020 to FY 2021 Increase/Decrease Statement:

N/A

Title: Test and Evaluation

Description: Integrated Test activities in support of Block 4, to include Lockheed Martin and Pratt & Whitney support at all test sites. 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, and to develop flight test instrumentation and release test software to meet Block 4 requirements. 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). Efforts include non-recurring engineering and procurement of a test article to evaluate service life of F-35B STOVL Aircraft.

Beginning in FY 2020, the USAF will support Flight Test Instrumentation (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 additional stores.

FY 2020 Plans:

USAF only funding will begin supporting SEEK EAGLE requests by providing FTI wiring and supporting weapons integration tasks.

FY 2021 Base Plans:

243.188	9.300	5.090	0.000	5.090	

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>USAF only funding will continue supporting SEEK EAGLE requests by providing FTI wiring and supporting weapons integration tasks.</p> <p>FY 2021 OCO Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Decrease as reduction in SEEK EAGLE support efforts ramp down.</p>					
<p>Title: Autonomic Logistics Information System (ALIS) Development</p> <p>Description: Autonomic Logistics Information System (ALIS) continues to deliver the core logistics and maintenance infrastructure requirements for the F-35 enterprise. ALIS includes features such as aircraft scheduling, training delivery, 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: supporting the F-35 enterprise Data Transformation effort and continuously integrating and delivering new capability.</p> <p>ALIS is focused on continuously integrating and delivering new software for current and the F-35 enterprise's next generation logistics and maintenance configuration. 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.</p> <p>ALIS re-architecture effort that began in FY 2019 will deliver its first next-generation configuration in Sep 2020, and complete fielding in FY 2023. ALIS will redesign its software, data, and hardware architecture with a focus on cybersecurity, affordability, resiliency, and supportability.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Base Plans:</p>	112.243	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: N/A					
Accomplishments/Planned Programs Subtotals	1,062.771	11.850	7.678	0.000	7.678
Other Service Funding Adjustment	647.773	-	-	-	-
Air Force Subtotals	414.998	11.850	7.678	0.000	7.678

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• RDTE 07 PE 0604840F: <i>F-35A Continuous Capability Development and Delivery</i>	0.000	642.371	785.336	0.000	785.336	549.279	450.915	521.012	586.709	Continuing	Continuing
• RDTE 07 PE 0207142F 6011: <i>Dual Capable Aircraft (DCA), BPAC 676011</i>	75.321	71.339	106.136	0.000	106.136	46.260	11.622	11.830	12.047	Continuing	Continuing
• RDTE 07 PE 0604840N 2936: <i>F-35C Continuous Capability Development and Delivery (CV)</i>	215.366	354.960	413.875	0.000	413.875	284.709	198.878	214.861	199.964	Continuing	Continuing
• RDTE 07 PE 0604840M 3410: <i>F-35B Continuous Capability Development and Delivery (STOVL)</i>	222.644	391.165	379.549	0.000	379.549	323.597	294.404	283.981	244.932	Continuing	Continuing
• RDTE International: <i>International Continuous Capability Development and Delivery</i>	209.763	281.887	339.139	0.000	339.139	224.501	189.728	158.811	177.542	Continuing	Continuing

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 Navy.

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<p>Program Element 0604800N/0604800M continues USN development efforts budgeted in 0603800N prior to FY2002. The United Kingdom, Italy, Netherlands, Canada, Australia, Denmark, and Norway are participants in the SDD phase of JSF.</p> <p>PE 0604810M/N ends in FY18 and continues in PE 0604840M/N as budget moves from BA05 to BA07.</p> <p>PE 0207142F common Block 4 requirements moved in FY20 to PE 0604840F to separate USAF unique requirements.</p>											

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prime LM 18-C-1004 PHASE II	SS/ Various	Lockheed Martin : Ft Worth, TX	226.618	260.674	Dec 2018	-		-		-		-	1,031.289	1,518.581	1,614.161
Prime LM 14-G-0020 TR3	C/CPFF	Lockheed Martin : Ft Worth, TX	239.789	156.992	Dec 2018	-		-		-		-	510.000	906.781	878.558
Prime LM BOA 0020 (Nimble Lightning+Pilot Training)	C/CPFF	Lockheed Martin : Ft Worth, TX	8.956	4.500	Mar 2019	-		-		-		-	17.500	30.956	31.216
Prime LM Flight Test Asset	Various	Various : TBD	37.548	11.571	Jan 2019	-		-		-		-	406.000	455.119	528.894
Prime LM TBD DT AC Viability	C/Various	Lockheed Martin : Ft Worth, TX	40.000	25.550	Jan 2019	-		-		-		-	415.000	480.550	580.305
Prime PW Propulsion	SS/CPFF	Pratt Whitney : East Hartford, CT	0.000	30.481	Feb 2019	-		-		-		-	220.000	250.481	269.450
Prime LM Developmental Foundation Contract	C/CPFF	Lockheed Martin : Ft Worth, TX	26.312	82.000	Nov 2018	-		-		-		-	345.000	453.312	445.550
Prime LM JRE Dev.	C/CPFF	Lockheed Martin : Ft Worth, TX	7.500	11.940	Dec 2018	-		-		-		-	0.000	19.440	-
Prime LM ALIS Next	C/Various	Lockheed Martin : Ft Worth, TX	0.000	6.968	Jan 2019	-		-		-		-	0.000	6.968	-
Prime LM ALIS Dev	C/CPAF	Lockheed Martin : Ft Worth, TX	0.000	52.443	Jul 2019	-		-		-		-	0.000	52.443	-
Prime LM Air Vehicle Integration	C/CPAF	Lockheed Martin : Ft Worth, TX	0.000	40.000	Jun 2019	-		-		-		-	0.000	40.000	-
Prime LM F-35B Fatigue Test Article	C/Various	Lockheed Martin : Ft Worth, TX	0.000	0.000	Jan 2020	-		-		-		-	0.000	0.000	-
Training Investments	C/CPFI	Lockheed Martin : Ft Worth, TX	0.000	5.000	Dec 2019	-		-		-		-	0.000	5.000	-
System Engineering	Various	Not specified. : TBD	28.142	19.290	Jan 2019	-		-		-		-	0.000	47.432	-
Prior Year no longer funded in FYDP	Various	Various : TBD	144.540	-		-		-		-		-	0.000	144.540	144.540
Subtotal			759.405	707.409		-		-		-		-	2,944.789	4,411.603	N/A

Remarks
Added Prime LM Air Vehicle Integration line to separate Air System risk reduction activities.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Block 4 Modernization on R-2A includes Phase II Development, Air Vehicle Integration and Systems Engineering.
 Infrastructure and Support on R-2A includes Nimble Lightning, LM JRE Development & Training Investments.
 Prime LM Phase II Development Contract is a hybrid CPIF/CPAF contract.
 Prime LM F-35B Fatigue Test Article is a hybrid CPIF/CPFF contract.
 Prime LM ALIS Next Contract is a hybrid CPFF/CPIF contract.
 Flight Test assets include weapons to support Test and assets needed for flight test instrumentation.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support	C/CPAF	Not specified : TBD	0.000	-		-		-		-		-	0.000	0.000	-
NAWC Paxutent River	WR	NAWCAD : Paxutent River, MD	24.648	38.947	Dec 2018	-		-		-		-	Continuing	Continuing	-
NAWC China Lake	WR	NAWCWD : China Lake, CA	3.579	10.298	Dec 2018	-		-		-		-	43.083	56.960	-
Edwards Air Force Base	Various	Edwards AFB : Edwards AFB, CA	1.486	0.000		-		-		-		-	0.000	1.486	-
AFFTC / Eglin AFB	Various	Eglin : Various	5.715	2.511	Dec 2018	-		-		-		-	15.268	23.494	-
IPT Development Support	Various	Various : Various : Various : Various	31.729	19.521	Dec 2018	-		-		-		-	0.000	51.250	-
Technical Planning/AFRL	Various	AFLCMC : Wright Patterson AFB, OH	2.411	8.344	Dec 2018	-		-		-		-	13.923	24.678	-
JRE Development Support	MIPR	Various : Various	23.520	24.705	Dec 2018	-		-		-		-	0.000	48.225	-
ALIS DevOps Development	Various	Various : Various	0.000	35.220	Dec 2018	-		-		-		-	0.000	35.220	-
ALIS Next Development	MIPR	Various : Various	10.739	17.612	Dec 2018	-		-		-		-	0.000	28.351	-
USAF SEEK EAGLE	Various	Various : Various	0.000	-		9.300	Mar 2020	5.090	Mar 2021	-		5.090	0.000	14.390	-
USAF UIDES	MIPR	Various : Various	0.000	-		2.550	Feb 2020	2.588	Feb 2021	-		2.588	0.000	5.138	-
Subtotal			103.827	157.158		11.850		7.678		-		7.678	Continuing	Continuing	N/A

Remarks
 Changed ALIS Development Support to ALIS DevOps Development Support to capture DevOps effort.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

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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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation PAX River	WR	NAWCAD : Paxutent River, MD	37.500	42.400	Dec 2018	-		-		-		-	174.872	254.772	-
Developmental Test & Evaluation China Lake	WR	NAWCWD : China Lake, CA	10.350	4.966	Dec 2018	-		-		-		-	40.470	55.786	-
Developmental Test & Evaluation Edwards/AFB	Various	Edwards AFB : Edwards AFB, CA	11.575	36.275	Dec 2018	-		-		-		-	110.470	158.320	-
Developmental Test & Evaluation	Various	Various : Various	10.250	3.500	Dec 2018	-		-		-		-	57.087	70.837	-
AFOTEC	MIPR	AFOTEC : Kirtland AFB, NM	4.500	0.000		-		-		-		-	0.000	4.500	-
Operational Test & Evaluation	WR	Various : Various	0.000	6.445	Dec 2018	-		-		-		-	0.000	6.445	-
Subtotal			74.175	93.586		-		-		-		-	382.899	550.660	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Services	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
AFLCMC Civilian Pay	Various	AFLCMC CIV PAY : Wright Patterson AFB, OH	65.277	37.886	Oct 2018	-		-		-		-	231.610	334.773	-
HPSI Program Sppt	Various	AFLCMC : Wright Patterson AFB, OH	10.225	12.078	Oct 2018	-		-		-		-	0.000	22.303	-
Financial Mgmt Database Support IDS	C/CPAF	IDS : Arlington, VA	0.800	0.812	Dec 2018	-		-		-		-	4.301	5.913	-
Earned Value/Finance/ Cost ACT-I	C/CPAF	ACT-I : Arlington, VA	4.500	3.500	Dec 2018	-		-		-		-	23.518	31.518	-
CIO BOS	C/CPAF	Various : TBD	7.801	0.000		-		-		-		-	0.000	7.801	-
System High BOS	C/CPAF	Various : Various	10.238	0.892	Dec 2018	-		-		-		-	95.066	106.196	-
Other CIO Services	Various	TBD : TBD	10.629	0.000		-		-		-		-	0.000	10.629	-
Operating Core Support	C/CPAF	Various : Various	0.000	11.074	Dec 2018	-		-		-		-	45.342	56.416	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force											Date: February 2020			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons					Project (Number/Name) 675346 / F-35			

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Core Civ Pay	Various	NAWCAD/WD : TBD	20.372	28.299	Dec 2018	-		-		-		-	0.000	48.671	-
Other Core Contractor Sppt	C/CPAF	Not specified. : TBD	5.113	6.382	Dec 2018	-		-		-		-	0.000	11.495	-
Travel	Various	Various : Various	5.039	3.695	Dec 2018	-		-		-		-	8.569	17.303	-
Subtotal			139.994	104.618		-		-		-		-	408.406	653.018	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.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Subtotals	1,077.401	1,062.771	11.850	7.678	-	7.678	Continuing	Continuing	N/A
Other Service Funding Adjustment	434.530	647.773	-	-	-	-			-
Project Cost Totals	642.871	414.998	11.850	7.678	-	7.678	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, Continuous Capability Development and Delivery (C2D2) (formerly Follow-on Modernization (FoM)) Memorandum of Agreement.

Subtotals and totals may not add due to rounding.

FY 2019 reflects \$414.998M USAF/\$215.366M USN/\$222.644M USMC/\$209.763M International/Total \$1,062.771M

FY 2020 reflects \$11.850M USAF only; remaining efforts continue in PEs 0604840F/M/N

FY 2021 reflects \$7.678M USAF only; remaining efforts continue in PEs 0604840F/M/N

F-35 C2D2 Includes:

PE 0207142F BPAC 675346 - ends FY19

USAF PE 0604840F BPAC 675346 - begins FY20

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
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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 2021 Air Force **Date:** February 2020

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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FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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

<i>F-35 UIDES and SEEK EAGLE</i>	
Ongoing support activities	

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force **Date:** February 2020

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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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>F-35 UIDES and SEEK EAGLE</i>				
Ongoing support activities	1	2019	4	2025

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 2021 Air Force **Date:** February 2020

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
675349: HPSI	0.000	0.000	16.754	18.415	0.000	18.415	19.854	20.246	0.000	0.000	0.000	75.269
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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.

Funding for HPSI was previously programmed for in PE 27142F/BPAC 675346. This is not a new start.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Management Services	0.000	16.754	18.415	0.000	18.415
Description: This funding provides for the transition of the F-35 HPSI from multiple locations to Wright-Patterson Air Force Base (AFB). The funding supports HPSI AFLCMC civilian pay, contractor support and travel.					
FY 2020 Plans: HPSI AFLCMC civilian personnel, contractor support and travel.					
FY 2021 Base Plans: The HPSI organization will continue to transition to Wright-Patterson AFB. This funding provides for HPSI AFLCMC civilian pay, contractor support and travel.					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase due to greater number of personnel at Wright-Patterson AFB as HPSI transition continues.					
Accomplishments/Planned Programs Subtotals	0.000	16.754	18.415	0.000	18.415

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force	Date: February 2020
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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>
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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 Navy.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675349 / HPSI
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Services	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
AFLCMC Civilian Pay	Allot	AFLCMC : TBD	0.000	-		10.902	Oct 2019	12.001	Oct 2020	-		12.001	0.000	22.903	-
Other Core Contractor Support	Various	Various : TBD	0.000	-		5.279	Oct 2019	5.783	Oct 2020	-		5.783	0.000	11.062	-
Travel	Various	Various : TBD	0.000	-		0.573	Oct 2019	0.631	Oct 2020	-		0.631	0.000	1.204	-
Subtotal			0.000	-		16.754		18.415		-		18.415	0.000	35.169	N/A
Project Cost Totals			0.000	-		16.754		18.415		-		18.415	0.000	35.169	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 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons	Project (Number/Name) 675349 / HPSI
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	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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 2021 Air Force		Date: February 2020
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>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Hybrid Product Support Integrator</i>				
Management Support Activities	1	2019	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
676011: JSF DUAL CAPABLE AIRCRAFT	81.813	75.321	71.339	106.136	0.000	106.136	45.260	11.622	11.830	12.047	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

F-35 C2D2 Includes:

- USAF PE 0207142F BPAC 675346 - ends FY19
- USAF PE 0604840F BPAC 675346 - begins FY20
- 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Dual Capable Aircraft (DCA) (F-35 JSF)	75.321	71.339	106.136	0.000	106.136
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					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force	Date: February 2020
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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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B. Accomplishments/Planned Programs (\$ in Millions)

B61-12 weapon. This effort also supports follow-on risk 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 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. 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 FY2021.

FY 2021 Base 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 continue 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. Continue initial nuclear certification hardware and software development and testing by the prime contractor, Lockheed Martin. In addition, the capability is considered MFR (Military Flight Release) complete and ready for graduation certification events ramp up in FY2021. Initiate the DCA monitor and control on a production aircraft as well as monitor and control graduation event on production aircraft. Complete full-up guide weapons test drops using production aircraft, initiate interim operational plan data document, and complete the final aircraft nuclear safety analysis report.

FY 2021 OCO Plans:

N/A

FY 2020 to FY 2021 Increase/Decrease Statement:

Increase due to planned program ramp up of DCA testing and development efforts.

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p><i>FY 2020 Plans:</i></p> <p>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. 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 FY2021.</p> <p><i>FY 2021 Base Plans:</i></p> <p>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 continue 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. Continue initial nuclear certification hardware and software development and testing by the prime contractor, Lockheed Martin. In addition, the capability is considered MFR (Military Flight Release) complete and ready for graduation certification events ramp up in FY2021. Initiate the DCA monitor and control on a production aircraft as well as monitor and control graduation event on production aircraft. Complete full-up guide weapons test drops using production aircraft, initiate interim operational plan data document, and complete the final aircraft nuclear safety analysis report.</p> <p><i>FY 2021 OCO Plans:</i></p> <p>N/A</p> <p><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></p> <p>Increase due to planned program ramp up of DCA testing and development efforts.</p>					
Accomplishments/Planned Programs Subtotals	75.321	71.339	106.136	0.000	106.136

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 07 PE 0207142F 5346: JSF Follow on Modernization, BPAC 675346	414.998	11.850	7.678	-	7.678	4.940	4.188	3.737	3.806	Continuing	Continuing
• RDTE 07 PE 0604840F: F-35A Continuous Capability Development and Delivery	-	642.371	785.336	-	785.336	549.279	450.915	521.012	586.709	Continuing	Continuing
• RDTE 07 PE 0604840N 2936: F-35C Continuous Capability Development and Delivery (CV)	215.366	354.960	413.875	-	413.875	284.709	198.878	214.861	199.694	Continuing	Continuing
• RDTE 07 PE 0604840M 3410: F-35B Continuous Capability Development and Delivery (STOVL)	222.644	391.165	379.549	-	379.549	323.597	294.404	283.981	244.932	Continuing	Continuing
• RDTE International: <i>International</i> Continuous Capability Development and Delivery	209.763	258.004	359.626	-	359.626	285.969	211.292	208.053	177.542	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 Navy.

Program Element 0604800N/M continues USN development efforts budgeted in 0603800N prior to FY2002.

The United Kingdom, Italy, Netherlands, 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force											Date: February 2020				
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207142F / F-35 Squadrons					Project (Number/Name) 676011 / JSF DUAL CAPABLE AIRCRAFT				

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
Block 4 Phase 1 - DCA Requirements Decomposition	SS/CPFF	Lockheed Martin : Ft. Worth, TX	21.572	-		-		-		-		-	Continuing	Continuing	-
Block 4 Phase 2.1 - DCA to PDR	SS/CPFF	Lockheed Martin : Ft. Worth, TX	8.080	19.990	Jan 2019	-		-		-		-	Continuing	Continuing	-
Block 4 Phase 2.3 - DCA to DT Complete	SS/CPFF	Lockheed Martin : Ft. Worth, TX	4.515	17.617	Feb 2019	32.200	Feb 2020	39.300	Feb 2021	-		39.300	Continuing	Continuing	-
Delta Certification	SS/CPFF	Lockheed Martin : Ft. Worth, TX	0.000	10.664	Jun 2019	15.839	Mar 2020	19.400	Mar 2021	-		19.400	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			50.582	48.271		48.039		58.700		-		58.700	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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support	C/CPAF	Not specified. : TBD	0.000	-		-		-		-		-	0.000	0.000	-
B61-12/F-35 Certification	Various	Various : TBD	26.356	21.340	Feb 2019	17.040	Feb 2020	22.800	Feb 2021	-		22.800	Continuing	Continuing	-
Tail-kit Program Office	MIPR	TKA SPO : Eglin AFB, FL	1.900	3.300	Feb 2019	4.900	Feb 2020	6.800	Mar 2021	-		6.800	Continuing	Continuing	-
AFNWC/AFSEC Support	MIPR	Various : TBD	1.360	2.410	Feb 2018	1.360	Feb 2020	4.200	Feb 2021	-		4.200	Continuing	Continuing	-
Prior Year - no longer funded in FYDP	Various	Various : TBD	0.791	-		-		-		-		-	0.000	0.791	-
Subtotal			30.407	27.050		23.300		33.800		-		33.800	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

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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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation Edwards	C/CPAF	Testing : Edwards, CA	0.000	-		-		6.200	Feb 2021	-		6.200	0.000	6.200	-
Air Force SEEK EAGLE Office (Combat Weapons Delivery Software)	MIPR	Testing : Eglin, FL	0.000	-		-		2.000	Feb 2021	-		2.000	0.000	2.000	-
Prior Year - no longer funded in FYDP	Various	Not specified. : TBD	0.824	-		-		-		-		-	0.000	0.824	-
Subtotal			0.824	-		-		8.200		-		8.200	0.000	9.024	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Services	C/CPAF	Not specified. : TBD	0.000	-		-		5.436	Feb 2021	-		5.436	0.000	5.436	-
Subtotal			0.000	-		-		5.436		-		5.436	0.000	5.436	N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		81.813	75.321	71.339	106.136	-	106.136	Continuing	Continuing	N/A

Remarks
 F-35 C2D2 Includes:
 USAF PE 0207142F BPAC 675346 - ends FY19
 USAF PE 0604840F BPAC 675346 - begins FY20
 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-3, RDT&E Project Cost Analysis: PB 2021 Air Force	Date: February 2020
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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>
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	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
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F-35 DCA Includes:
USAF PE 0207142F BPAC 676011

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

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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	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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 2021 Air Force		Date: February 2020
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	2019	4	2023
Phase 1 (Nuclear Certification Tasks) Requirements Decomposition	1	2019	2	2019
Phase 2.1 (Nuclear Certification Tasks) DCA to Preliminary Design Review (PDR)	1	2019	4	2021
Phase 2.3 (Nuclear Certification Tasks) DCA to DT Complete	1	2019	4	2023
Delta Certification of Hardware/Software Upgrades	3	2019	4	2025

Note

Schedule details reflect fiscal years