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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army	Date: March 2019
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev							
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	-	9.653	86.180	459.290	-	459.290	536.067	656.804	661.194	801.200	Continuing	Continuing
B47: Future Vertical Lift	-	9.653	86.180	31.990	-	31.990	22.067	45.104	230.294	652.900	Continuing	Continuing
F12: Future Attack Reconnaissance Aircraft	-	0.000	0.000	427.300	-	427.300	514.000	611.700	430.900	148.300	Continuing	Continuing

A. Mission Description and Budget Item Justification

Future Vertical Lift (FVL) is an initiative to develop a family of vertical lift aircraft for the United States Armed Forces. FVL was established by the Secretary of Defense to focus all Department of Defense (DoD) vertical lift capabilities and technology development as well as retain long-term engineering capabilities. The Deputy Secretary of Defense issued the FVL Strategic Plan to outline a joint approach for the next generation vertical lift aircraft for all military services. The Strategic Plan provided a foundation for replacing the current fleet with advanced capability by shaping the development of vertical lift aircraft for the next 25 to 40 years. In 2017, FVL was identified as one of the Army's eight Cross Functional Team Pilots, derived from the six Chief of Staff of the Army modernization priorities. The development and fielding of FVL will significantly improve vertical lift capabilities providing critical aviation support to the Joint warfighting community. Increases in maneuverability, range, speed, payload, survivability, reliability, and reduced logistical footprint can only be achieved through the FVL approach of developing new aircraft designs. FVL will integrate advancements in technologies and design configurations balanced with appropriate trades to ensure affordability.

B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	14.055	10.793	21.690	-	21.690
Current President's Budget	9.653	86.180	459.290	-	459.290
Total Adjustments	-4.402	75.387	437.600	-	437.600
• Congressional General Reductions	-0.008	-0.013			
• Congressional Directed Reductions	-4.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	75.400			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.394	-			
• Adjustments to Budget Years	-	-	437.600	-	437.600

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

Project: B47: Future Vertical Lift

Congressional Add: Future Attack Reconnaissance Aircraft

FY 2018	FY 2019
-	75.400

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>		R-1 Program Element (Number/Name) PE 0603801A / <i>Aviation - Adv Dev</i>	
<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u>		FY 2018	FY 2019
Congressional Add Subtotals for Project: B47		-	75.400
Congressional Add Totals for all Projects		-	75.400
<u>Change Summary Explanation</u> <p>The FY 2018 funding request was reduced by \$4M due to a delay in the FVL Project B47's Future Long Range Assault Aircraft (FLRAA) Analysis of Alternatives.</p> <p>The FY 2019 funding request was increased for the Army's future vertical lift program to initiate the Capability Set One Future Attack Reconnaissance Aircraft (FARA) competitive prototyping effort. In FY 2020 and beyond, FARA funds are requested under Project F12 Future Attack Reconnaissance Aircraft.</p> <p>The FY 2020 funding request increase (\$10.300M) in PE 0603801A B47 for Future Long Range Attack Aircraft is the funding required to support the Army's opportunity to accelerate the FLRAA program schedule.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev				Project (Number/Name) B47 / Future Vertical Lift			
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
B47: Future Vertical Lift	-	9.653	86.180	31.990	-	31.990	22.067	45.104	230.294	652.900	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Future Vertical Lift Project's funding provides for the development of a Future Long Range Assault Aircraft (FLRAA) Capability Set Three (CS3) aircraft system within the FVL family of systems. FVL FLRAA (CS3) aircraft will conduct Air Assault, Amphibious Assault, Urban Assault/Security, Attack, Maritime Interdiction, Medical Evacuation (MEDEVAC), Humanitarian Assistance/Disaster Relief (HA/DR), Tactical Resupply, Direct Action (DA), Non-Combatant Evacuation Operation (NEO) and Combat Search and Rescue (CSAR) operations in support of Army, including Army Special Operations Command, Marine Corps and Joint forces. The FVL FLRAA (CS3) platform will significantly increase speed, range, mobility, and payload over current US Army H-60 and US Marine Corps H-1 aircraft and provide Combatant Commanders with tactical capabilities at greatly increased operational and strategic distances. The FVL Capability Set 3 Materiel Development Decision was approved October 2016. FY 2018 funding continued to support FVL AoA modeling, simulation and analysis to include risk, cost and affordability, sustainment and trades and initiation of the Test Evaluation and Master Plan (TEMP), Draft Capability Development Document (CDD), Acquisition Strategy, Life Cycle Cost Estimate, and Life Cycle Sustainment Plan (LCSP). FY 2019 funding will complete the AoA efforts, Acquisition Planning and Strategy Development and LCSP, conduct Initial Readiness Assessments, prepare Systems Engineering decomposition and translation of Draft CDD into Weapon System Specification, and initiate the balance of Milestone A documentation and Technology Maturation and Risk Reduction (TMRR) Contract Requirements Package (CRP). FY 2020 funding will support the completion and staffing of key Milestone A documentation to include the Acquisition Strategy, the Weapon System Specification, the Systems Engineering Plan, and the LCSP and will support the continued development of the TEMP and the CRP. The Army is continuing to seek opportunities to accelerate the FLRAA program schedule.

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

	FY 2018	FY 2019	FY 2020
Title: Future Vertical Lift (FVL) Analysis of Alternatives Description: FVL Analysis of Alternatives modeling, simulation, and analysis performed by U.S. Army TRADOC Analysis Center, U.S. Army Materiel Systems Analysis Activity and other supporting agencies. FY 2019 Plans: Effort will be completed in FY 2019. FY 2019 to FY 2020 Increase/Decrease Statement: The AoA will conclude in FY 2019.	2.039	1.190	-
Title: Engineering Services / Research Studies Description: Engineering research, planning, modeling, analyses and reviews supporting the FVL acquisition program. FY 2019 Plans:	4.431	6.296	23.032

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev	Project (Number/Name) B47 / Future Vertical Lift		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Conduct Initial Readiness Assessment, prepare Systems Engineering Decomposition and Translation of Draft Capability Development Documentation (CDD) into Weapon System Specification and initiate Milestone A documentation development. FY 2020 Plans: Will complete and staff key Milestone A documentation to include the Weapon System Specification and Systems Engineering Plan and continue developing the TEMP and CRP. FY 2019 to FY 2020 Increase/Decrease Statement: Engineering staff ramp up to support activities leading to Milestone A and TMRR Contract Award.				
Title: Program Management Description: Oversight and management of the FVL acquisition program. FY 2019 Plans: Complete Acquisition Planning and Strategy Development for FVL Capability Set 3 aircraft. Begin development of Milestone A documentation and TMRR Contracts Requirements Package. FY 2020 Plans: Complete and staff key Milestone A documentation to include the Acquisition Strategy and continue developing the CRP. FY 2019 to FY 2020 Increase/Decrease Statement: Program staff ramp up to support activities leading to Milestone A and TMRR Contract Award.		2.448	1.695	5.280
Title: Supportability Analysis and Acquisition Support Description: Acquisition and supportability planning and development of documentation on the FVL program. FY 2019 Plans: Complete the development of the Life Cycle Sustainment Plan and participate in the development of the Contracts Requirements Package to support the TMRR Request for Proposal (RFP) release. FY 2020 Plans: Will complete the staffing of the LCSP and continue developing the CRP. FY 2019 to FY 2020 Increase/Decrease Statement: Staff ramp up to support activities leading to Milestone A and TMRR Contract Award.		0.735	1.204	3.678
Title: FY 19 SBIR/STTR Transfer Description: FY 2019 SBIR/STTR Transfer		-	0.395	-

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Appropriation/Budget Activity 2040 / 4				R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev				Project (Number/Name) B47 / Future Vertical Lift			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2018	FY 2019	FY 2020	
FY 2019 Plans: FY 2019 SBIR/STTR Transfer											
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 SBIR/STTR Transfer											
Accomplishments/Planned Programs Subtotals								9.653	10.780	31.990	
								FY 2018	FY 2019		
Congressional Add: Future Attack Reconnaissance Aircraft								-	75.400		
FY 2019 Plans: Future Attack Reconnaissance Aircraft											
Congressional Adds Subtotals								-	75.400		
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
• 313: Adv Rotarywing Veh Tech	142.093	113.678	0.000	-	0.000	-	-	-	-	0.000	255.771
Remarks PE 0603003A/313 Advanced Rotary-wing Vehicle Technology funds Army Science & Technology (S&T) projects to mature, demonstrate and integrate components, subsystems and systems for vertical lift and unmanned air vehicle technologies. This will enable Army aviation modernization and reduce risk for FVL FLRAA.											
D. Acquisition Strategy An Analysis of Alternatives (AoA) was initiated in 3rd Quarter FY 2017 to assess the technical feasibility, operational feasibility, technical risk, and affordability of potential materiel solutions. The AoA will be informed by previous studies, ongoing Advanced Technology Development S&T projects, and input from government, industry and academia. The results of the AoA and Initial Readiness Assessments will be available to support a projected Milestone A decision in 4th Quarter FY 2021 and a Technology Maturation and Risk Reduction (TMRR) Request for Proposal (RFP) Release in 1st Quarter FY 2022. After a successful Source Selection Evaluation Board, the Army will award competitive TMRR contracts to complete preliminary design and risk reduction testing.											
E. Performance Metrics N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 4						R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev				Project (Number/Name) B47 / Future Vertical Lift					
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
Program Management	MIPR	FVL Program Office : Redstone Arsenal, AL	0.320	2.448	Nov 2017	1.695	Dec 2018	5.280	Dec 2019	-		5.280	Continuing	Continuing	Continuing
Subtotal			0.320	2.448		1.695		5.280		-		5.280	Continuing	Continuing	N/A
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
Analysis of Alternatives (AoA)	TBD	TRADOC Analysis Center : Fort Leavenworth, KS	2.430	2.039	Nov 2017	1.190	Nov 2018	-		-		-	0.000	5.659	-
Subtotal			2.430	2.039		1.190		-		-		-	0.000	5.659	N/A
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
Engineering Services / Research Studies - Organic	MIPR	FVL Program Office : Redstone Arsenal AL	0.549	1.432	Nov 2017	5.132	Nov 2018	13.405	Nov 2019	-		13.405	Continuing	Continuing	Continuing
Engineering Services / Research Studies - Other	C/FFP	GSA : Atlanta, GA	3.978	2.999	Aug 2018	1.164	Aug 2019	9.627	Aug 2019	-		9.627	Continuing	Continuing	Continuing
Acquisition and Supportability Analysis	MIPR	Army Logistics Command / Army Contracting Command : Redstone Arsenal, AL	0.425	0.735	Nov 2017	1.204	Dec 2018	3.678	Nov 2019	-		3.678	Continuing	Continuing	Continuing
Future Attack Reconnaissance Aircraft Execution	C/Various	AMRDEC : RSA	-	-		75.400	Jun 2019	-		-		-	0.000	75.400	-
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	-		0.395		-		-		-	0.000	0.395	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019		
Appropriation/Budget Activity 2040 / 4						R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev				Project (Number/Name) B47 / Future Vertical Lift				

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
Subtotal			4.952	5.166		83.295		26.710		-		26.710	Continuing	Continuing	N/A

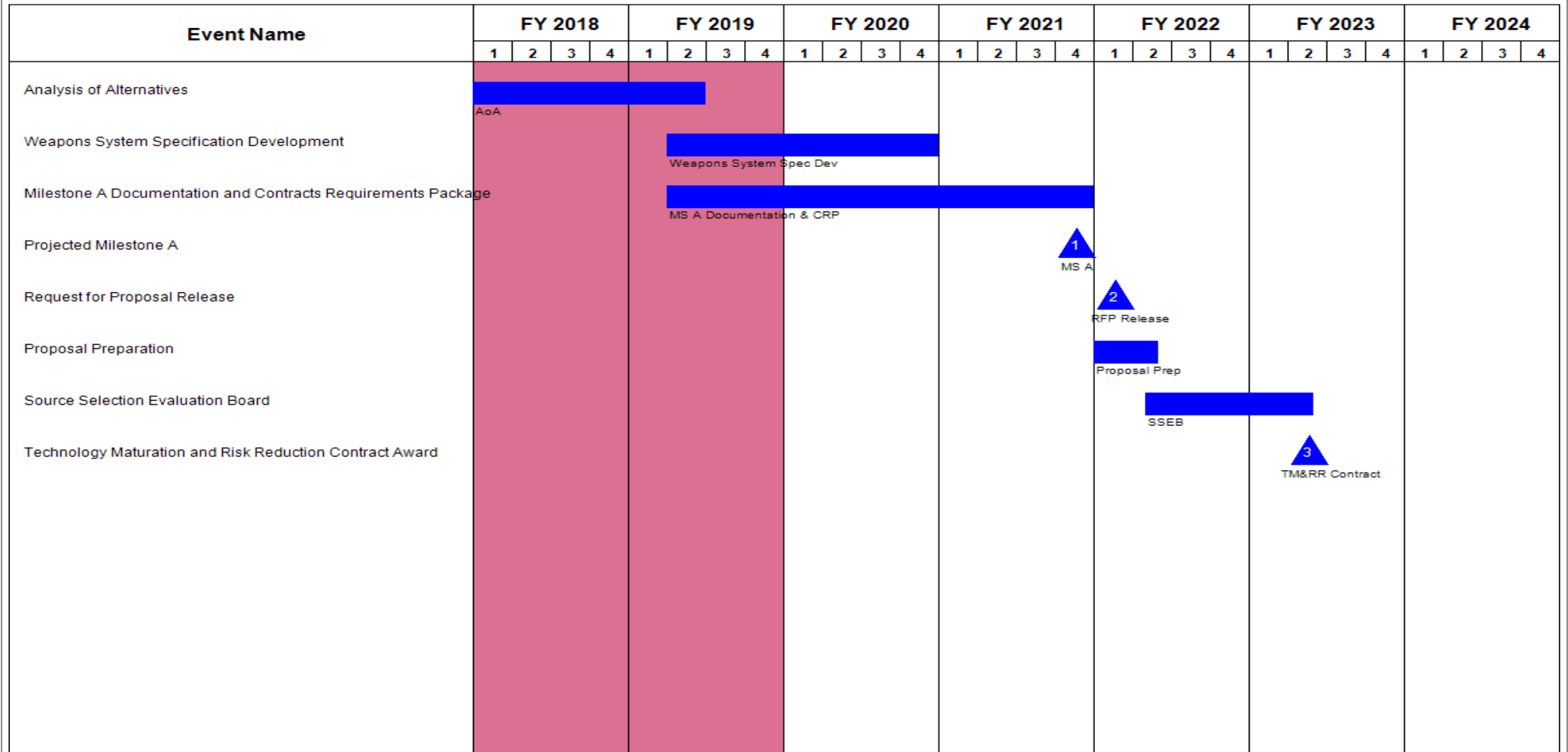
	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.702	9.653		86.180		31.990		-		31.990	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army Date: March 2019

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev	Project (Number/Name) B47 / Future Vertical Lift
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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603801A / <i>Aviation - Adv Dev</i>	Project (Number/Name) B47 / <i>Future Vertical Lift</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Analysis of Alternatives	3	2017	2	2019
Weapons System Specification Development	2	2019	4	2020
Milestone A Documentation and Contracts Requirements Package	2	2019	4	2021
Projected Milestone A	4	2021	4	2021
Request for Proposal Release	1	2022	1	2022
Proposal Preparation	1	2022	2	2022
Source Selection Evaluation Board	2	2022	2	2023
Technology Maturation and Risk Reduction Contract Award	2	2023	2	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army										Date: March 2019		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev				Project (Number/Name) F12 / Future Attack Reconnaissance 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
F12: Future Attack Reconnaissance Aircraft	-	0.000	0.000	427.300	-	427.300	514.000	611.700	430.900	148.300	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
Project F12 transitioned from BA3 PE 0603003A (Aviation Advanced Technology).

A. Mission Description and Budget Item Justification
The Future Attack Reconnaissance Aircraft Project's funding provides for the development of a Capability Set 1 aircraft system within the FVL family of systems. FVL Capability Set 1 aircraft will conduct attack/reconnaissance missions in support of the Army. The FVL Capability Set 1 platform will fill the gap in capability for light weight attack/reconnaissance while significantly increasing speed, range, survivability, and lethality over the previously used OH-58 and provide Combatant Commanders with greatly increased tactical, operational and strategic capabilities. The FVL Capability Set 1 Initial Capabilities Requirements Document was approved in July 2018 under the name Future Attack Reconnaissance Aircraft (FARA).

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2018	FY 2019	FY 2020
Title: Future Attack Reconnaissance Aircraft	-	-	427.300
Description: Design, build, and test competitive prototypes in preparation for rapid acquisition and fielding.			
FY 2020 Plans: At the completion of the initial design phase, two industry solutions will be chosen to continue to final design, build, and test.			
FY 2019 to FY 2020 Increase/Decrease Statement: Funding in 2019 initiates the effort and in 2020, the two selectees begin to finalize and build the designs.			
Accomplishments/Planned Programs Subtotals	-	-	427.300

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

Remarks

D. Acquisition Strategy
The Future Attack Reconnaissance Aircraft (FARA) received a Congressional plus up (\$75.4M) in FY 2019 within the Project B47 FVL line. A streamlined acquisition approach is planned by executing a competitive prototyping effort thru FY 2023 leading to entry to a formal program of record, potentially at MS B, in 2024 for an EMD phase and production. Four to six vendor solutions will be evaluated starting in FY 2019 thru FY 2020 resulting in a downselect to two vendor solutions for final design, build, and test, which will provide the required data and information to downselect to one solution for the EMD phase.

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev	Project (Number/Name) F12 / Future Attack Reconnaissance Aircraft

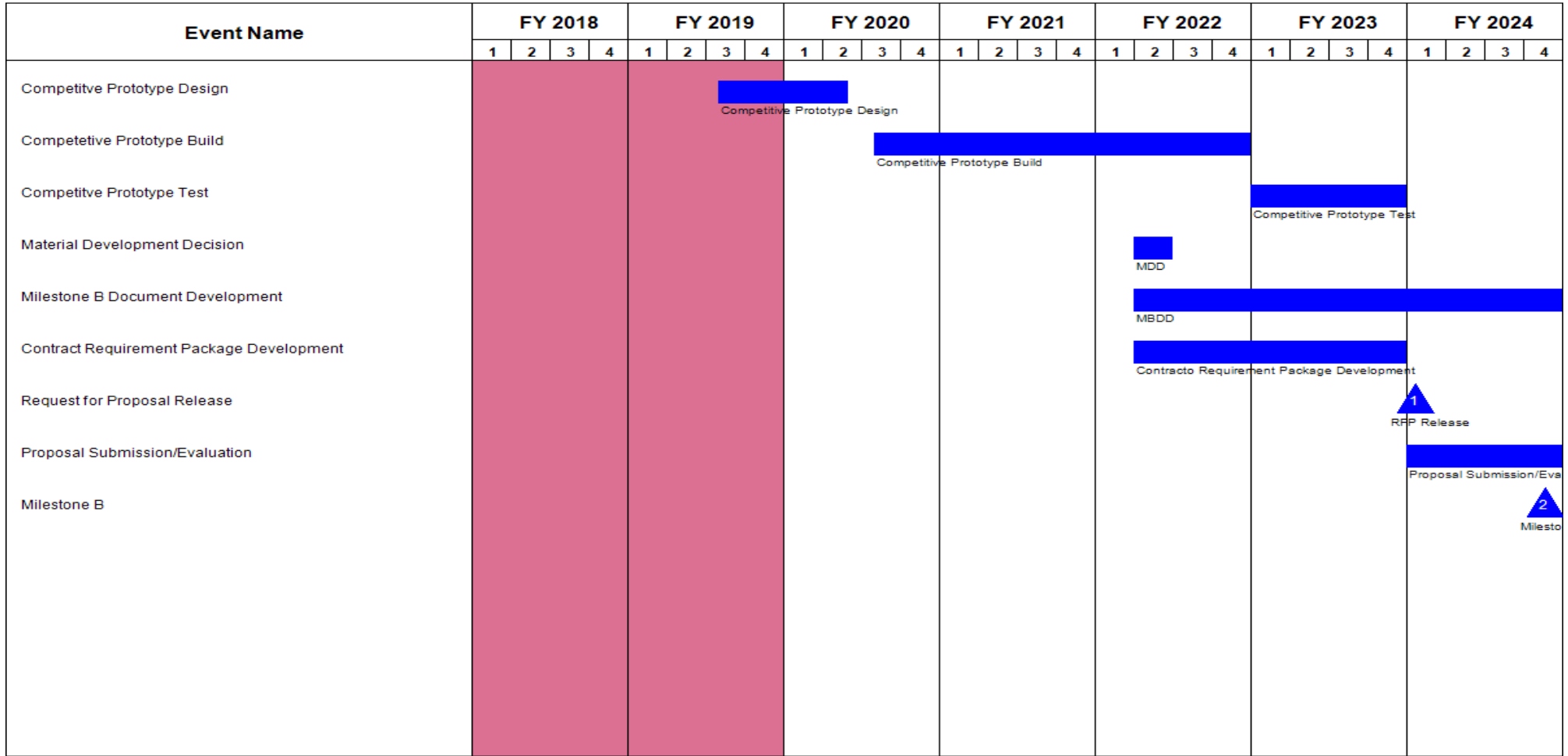
E. Performance Metrics
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 4						R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev				Project (Number/Name) F12 / Future Attack Reconnaissance Aircraft					
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
Execution	C/Various	AMRDEC : Redstone Arsenal, AL	-	-		-		427.300	Mar 2020	-		427.300	Continuing	Continuing	-
Subtotal			-	-		-		427.300		-		427.300	Continuing	Continuing	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		427.300		-		427.300	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army			Date: March 2019		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
2040 / 4		PE 0603801A / Aviation - Adv Dev		F12 / Future Attack Reconnaissance Aircraft	



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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603801A / Aviation - Adv Dev	Project (Number/Name) F12 / Future Attack Reconnaissance Aircraft	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Competitive Prototype Design	3	2019	2	2020
Competitive Prototype Build	3	2020	4	2022
Competitive Prototype Test	1	2023	4	2023
Material Development Decision	2	2022	2	2022
Milestone B Document Development	2	2022	4	2024
Contract Requirement Package Development	2	2022	4	2023
Request for Proposal Release	1	2024	1	2024
Proposal Submission/Evaluation	1	2024	4	2024
Milestone B	4	2024	4	2024