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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</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	-	18.754	37.614	3.011	0.000	3.011	3.218	3.266	3.324	3.385	Continuing	Continuing
646003: <i>Partnership Intermediary Agreement(s)</i>	-	6.763	17.096	3.011	0.000	3.011	3.218	3.266	3.324	3.385	Continuing	Continuing
646030: <i>AFwerX</i>	-	11.991	20.518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	32.509

**A. Mission Description and Budget Item Justification**

The Technology Transfer Program captures and manages all intellectual property (patents and inventions) developed by the Air Force and leads efforts to transfer the intellectual property to commercial sector for the production and transition of the technology to the warfighter.

TechLink, Department of Defense's (DoD)'s first National level Partnership Intermediary, directly supports these activities for all Air Force, Army, Navy, and independent DoD Research Laboratories. TechLink brokers technology transfer agreements between DoD laboratories and US industry for the manufacture and use of DoD inventions. These agreements enable DoD to leverage the investment and capabilities of the private-sector in development of new defense-related products and services, lowering DoD costs and also helping ensure that DoD-developed or co-developed technologies are transitioned to DoD operational use. This program impacts virtually all technology fields, including medicine, software, electronics, communications, advanced materials, and energy-related technologies.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Technology Transfer capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

In FY 2021, all efforts and civilian manpower under Project 646030, AFWERX, will be transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution of AFWERX activities.

The FY 2021 funding request was reduced by \$0.130 million to account for availability of prior year execution balances.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	16.924	23.614	13.662	0.000	13.662
Current President's Budget	18.754	37.614	3.011	0.000	3.011
Total Adjustments	1.830	14.000	-10.651	0.000	-10.651
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	14.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	2.450	0.000			
• SBIR/STTR Transfer	-0.620	0.000			
• Other Adjustments	0.000	0.000	-10.651	0.000	-10.651

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

**Project:** 646003: *Partnership Intermediary Agreement(s)*

Congressional Add: *Program Increase - technology partnerships*

Congressional Add: *Program increase - academic partnership intermediary agreement tech transfer*

Congressional Add Subtotals for Project: 646003

Congressional Add Totals for all Projects

	<b>FY 2019</b>	<b>FY 2020</b>
	3.854	4.000
	0.000	10.000
	3.854	14.000
	3.854	14.000

**Change Summary Explanation**

1) Increase in FY 2019 of \$2.450 million due to reprogramming for AFWERX product development.

2) Decrease in FY 2021 of \$10.651 million due to all efforts and civilian manpower under Project 646030, AFWERX, being transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution of AFWERX activities and to account for availability of prior year execution balances and Department of Defense inflationary factors.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Air Force										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>				<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646003: <i>Partnership Intermediary Agreement(s)</i>	-	6.763	17.096	3.011	0.000	3.011	3.218	3.266	3.324	3.385	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project accomplishes the following: (1) establish license agreements to transfer patented inventions from Department of Defense (DoD) research laboratories to industry for conversion into new dual-use products and services to support DoD's defense mission and benefit the US economy; and (2) establish collaborative research and development agreements (CRADAs) with the private-sector for development of new, innovative, dual-use technology. Both of these activities enable DoD to leverage the investment and capabilities of the private-sector in development of new defense-related products and services, lowering DoD costs and also helping ensure that DoD-developed or co-developed technologies are transitioned to DoD operational use.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> Technology Transfer	2.909	3.096	3.011
<b>Description:</b> Enhance and expand transfer of technologies between DoD and the commercial sector.			
<b>FY 2020 Plans:</b> Continue to implement new cost-effective approaches to further increase and accelerate transfer of technologies developed at DoD laboratories and facilitate their transition to the warfighter. Evaluate and market DoD laboratory inventions and broker technology transfer agreements/CRADAs, to include commercial licenses, that will support the US defense mission and benefit the US economy. Engage the innovative capabilities of non-traditional defense contractors in developing and commercializing new dual-use products and services.			
<b>FY 2021 Plans:</b> Evaluate and market DoD laboratory inventions and broker license and other technology transfer agreements/ CRADAs between DoD research labs and U.S. companies to support the U.S. defense mission and benefit the U.S. economy. Implement new cost-effective approaches to increase and accelerate transfer of DoD lab technologies and facilitate their transition to DoD operational use. This effort will focus primarily on the non-traditional defense industrial base and is intended to leverage the innovativeness, resources, and capabilities of the private-sector in developing and commercializing new dual-use products and services.			
<b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> FY 2021 decreased compared to FY 2020 by \$0.085 million due to Department of Defense inflationary factors.			
<b>Accomplishments/Planned Programs Subtotals</b>	2.909	3.096	3.011

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

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>
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	FY 2019	FY 2020
<b>Congressional Add:</b> Program Increase - technology partnerships <b>FY 2019 Accomplishments:</b> Conducted Congressionally directed efforts. <b>FY 2020 Plans:</b> Conduct Congressionally directed efforts.	3.854	4.000
<b>Congressional Add:</b> Program increase - academic partnership intermediary agreement tech transfer <b>FY 2019 Accomplishments:</b> Not applicable. <b>FY 2020 Plans:</b> Conduct Congressionally directed efforts.	0.000	10.000
<b>Congressional Adds Subtotals</b>	3.854	14.000

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

N/A

**Remarks**

N/A

**D. Acquisition Strategy**

This effort uses a Partnership Intermediary Agreement (PIA) with TechLink at Montana State University. Through this agreement TechLink helps the Department of Defense to establish licensing and other technology transfer agreements with US industry. The effort is run through the Air Force Research Laboratory/Small Business office at Wright Patterson Air Force Base.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2021 Air Force		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>

	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
<b><i>Partnership Intermediary</i></b>																												
Tech Transfer Partnership Intermediary																												
Congressional Add - technology partnerships																												
Congressional Add - academic partnership intermediary agreement tech transfer																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Air Force		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Partnership Intermediary</i></b>				
Tech Transfer Partnership Intermediary	1	2019	4	2025
Congressional Add - technology partnerships	1	2019	4	2020
Congressional Add - academic partnership intermediary agreement tech transfer	1	2020	4	2020

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Air Force										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>				<b>Project (Number/Name)</b> 646030 / <i>AFwerX</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646030: <i>AFwerX</i>	-	11.991	20.518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	32.509
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This project improves Air Force capabilities by connecting innovators, simplifying technology transfer, and accelerating results. AFWERX will accomplish this mission by: (1) Connecting diverse, innovative members from industry, academia, and government; (2) Creating capabilities options and prototype opportunities for the Air Force; (3) Facilitating streamlined acquisition processes; and (4) Fostering a culture of innovation in the Air Force.

In FY 2021, all efforts and civilian manpower under Project 646030, AFWERX, will be transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution of AFWERX activities.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> AFWERX	11.991	19.925	0.000
<b>Description:</b> Connect diverse, innovative members from industry, academia, and government to create capabilities options and prototype opportunities for the Air Force.			
<b>FY 2020 Plans:</b> Host additional innovative competitions to support warfighter needs at the DC, Las Vegas, and Austin Innovation hubs. Increase collaboration with government innovative centers, academia, think tanks, and industry through technology accelerator programs. Utilize additional virtual collaboration tools and analytics. Additional AFWEX Innovation Hub locations may be added as directed by Air Force Senior Leadership.			
<b>FY 2021 Plans:</b> In FY 2021, the entirety of this effort will be transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution of AFWERX activities.			
<b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> FY 2021 decreased compared to FY 2020 by \$19.925 million. Funding decreased due to the transfer of AFWERX activities to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities for proper execution.			
<b>Title:</b> AFWERX Acquisition Support	0.000	0.593	0.000
<b>Description:</b> Provide professional government civilian workforce in support of AFWERX programs and activities.			
<b>FY 2020 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Air Force	<b>Date:</b> February 2020
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646030 / <i>AFwerX</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
Continue to provide professional government civilian workforce in support of all AFWERX programs and activities. This includes three government civilians with average work year costs of \$0.197 million.			
<b><i>FY 2021 Plans:</i></b> In FY 2021, civilian manpower to support AFWERX activities will be transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution.			
<b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> FY 2021 decreased compared to FY 2020 by \$0.593 million. Funding decreased due to the transfer of all AFWERX civilian manpower to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution.			
<b>Accomplishments/Planned Programs Subtotals</b>	11.991	20.518	0.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

The District of Columbia (DC) Innovation Hub and the Las Vegas Innovation Hub are contracted under existing Air Force Research Laboratory (AFRL) Partnership Intermediary Agreements (PIAs) awarded to Virginia Tech Applied Research Corporation and the DefenseWerx.

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

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646030 / <i>AFWERX</i>
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<b>Product Development (\$ in Millions)</b>				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			
Las Vegas Innovation Hub	PO	DefenseWerx : Ft Walton Beach, FL	-	4.900	Jan 2019	8.300	Jan 2020	0.000		-		0.000	0.000	13.200	-
District of Columbia (DC) Innovation Hub	PO	VA Tech Applied Res Corp : Arlington, VA	-	4.750	Jan 2019	5.525	Jan 2020	0.000		-		0.000	0.000	10.275	-
Austin Innovation Hub	MIPR	Capital-Factory : Austin, TX	-	0.275	Jan 2019	0.500	Jan 2020	0.000		-		0.000	0.000	0.775	-
Product Development and Tools	Various	All AFWERX locations : TBD	-	2.066	Sep 2019	5.600	Jan 2020	0.000		-		0.000	0.000	7.666	-
<b>Subtotal</b>			-	11.991		19.925		0.000		-		0.000	0.000	31.916	N/A

**Remarks**  
In FY 2021, the entirety of work and civilian manpower under Project 646030, AFWERX, will be transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution of AFWERX activities.

<b>Management Services (\$ in Millions)</b>				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			
Acquisition workforce	Allot	HQ Air Force : Arlington, VA	-	0.000		0.593	Oct 2019	0.000		-		0.000	0.000	0.593	-
<b>Subtotal</b>			-	0.000		0.593		0.000		-		0.000	0.000	0.593	N/A

**Remarks**  
In FY 2021, the entirety of work and civilian manpower under Project 646030, AFWERX, will be transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution of AFWERX activities.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	11.991	20.518	0.000	-	0.000	0.000	32.509	N/A

**Remarks**

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

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646030 / <i>AFwerX</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>AFwerX</i>	
AFwerX	[REDACTED]

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

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646030 / <i>AFwerX</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>AFwerX</i></b>				
<i>AFwerX</i>	1	2019	4	2020

**Note**

In FY 2021, the entirety of work and civilian manpower under Project 646030, AFWERX, will be transferred to the Air Force Operations and Maintenance (O&M) appropriation, Budget Activity (BA-04), Administration and Service-wide Activities, for proper execution of AFWERX activities.