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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 6: RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 1001004F / <i>International Activities</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	-	3.866	4.071	3.599	0.000	3.599	4.221	4.298	4.376	4.456	Continuing	Continuing
664645: <i>International Cooperative Research &amp; Development</i>	-	3.866	4.071	3.599	0.000	3.599	4.221	4.298	4.376	4.456	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The mission of this program is to establish, sustain, expand, and enhance mutually beneficial international partnerships through the implementation of air, space, and cyber international armament cooperation (IAC) agreements thereby supporting USAF and DoD goals and objectives. These International Agreements (IAs) will: significantly improve US and allied conventional defense capacity and capabilities; accelerate the availability of defense systems; realize solutions to meet capability gaps; acquire, upgrade, sustain, and/or support common or interoperable equipment with our allies; create cooperative acquisition, production, or logistic partnerships; promote mutual and equitable sharing of effort, cost, information, and risk; provide access to remote or operational test sites; leverage economies of scale; and promote interoperability and commonality with our allies.

The USAF is party to numerous (+500) air, space, and cyber bilateral and multilateral IAs to solve common US and allied military capability gaps, develop materiel solutions, harmonize requirements, and build interoperability with our international partners. This program element funds the USAF to identify, develop, process, negotiate, conclude, implement, and manage IAs in compliance with statutory provisions, legal authorities, fiscal constraints, technology transfer controls, intellectual property rights, third party transfer provisions, equitability criteria, industrial base factors, political-military interests, and the National Defense Strategy (NDS). Included in this budget are: air, space, and cyber IAC IAs activities; technology assessments; specialized working groups; Air Senior National Representative (ASNR) activities; IAC program and project reviews; bilateral and multilateral staff talks; Engineering and Scientist Exchange Program (ESEP); and Administrative and Professional Exchange Program (APEP).

This program is in Budget Activity 6, RDT&E Management Support because this budget activity includes research, development, test and evaluation efforts and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation.

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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	3.998	4.071	4.142	0.000	4.142
Current President's Budget	3.866	4.071	3.599	0.000	3.599
Total Adjustments	-0.132	0.000	-0.543	0.000	-0.543
• 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	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.132	0.000	-0.543	0.000	-0.543
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>		
<b>Title:</b> International Partnership Activities	1.738	1.821	1.278		
<b>Description:</b> Funds USAF management, support, and oversight of IAC goals and objectives to build global partnerships in support of national security objectives and the National Defense Strategy (NDS). Funds USAF participation in NATO forums to promote harmonization and interoperability. Funds USAF support and participation in OSD bi-lateral IAC forums. Funds SAF/IA Australian liaison office. Funds technical assessments and discussions that support technology development activities and interoperability. Funds USAF efforts to enhance existing relationships with: Australia, Belgium, Canada, Denmark, France, Germany, Israel, Italy, Japan, NATO, Netherlands, New Zealand, Norway, South Korea, Singapore, Spain, Sweden, and UK. Funds USAF efforts to strengthen/build IAC relationships with: Czech Republic, Estonia, Finland, Hungary, India, Luxembourg, Poland, and Turkey. Funds USAF efforts to establish IAC relationships with: Brazil, Chile, Columbia, Peru, South Africa, Taiwan, and other emerging partners IAW the NDS.					
<b>FY 2020 Plans:</b> Continue ongoing management, support, and oversight of IAC goals and objectives to establish, sustain, expand and enhance mutually beneficial partnerships between the US and coalition partners to meet current and emerging global strategic challenges through optimization of interoperability, integration, and interdependence between coalition forces. Continuing efforts will have an enhanced focus on mutually beneficial partnerships IAW the NDS.					
<b>FY 2021 Plans:</b> Continue ongoing management, support, and oversight of IAC goals and objectives to establish, sustain, expand and enhance mutually beneficial partnerships between the US and coalition partners to meet current and emerging global strategic challenges					

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
through optimization of interoperability, integration, and interdependence between coalition forces. Continuing efforts will have an enhanced focus on mutually beneficial partnerships IAW the NDS.  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Decrease of \$.543M is due to adjustments made within the USAF budget, the decrease will require re-alignment of priorities to International Activities Partnerships.				
<b>Title:</b> International Armaments Cooperation (IAC) Agreement Activities  <b>Description:</b> Funds the USAF's ability to identify, develop, process, negotiate, conclude, implement, and manage an increasing number of research, development, test, and evaluation (RDT&E) bilateral and multilateral IAC Agreements that meet the goals, objectives, and mission of the USAF and DoD. IAC activities provide the USAF access to: critical geography; remote test ranges; challenged environments; operational environments; threat scenarios; new capabilities; world class R&D facilities; personnel; cost sharing; economies of scale; critical information systems; and launch vehicles. IAC activities will meet warfighter needs and enhance interoperability by cooperating with our partners in the areas of: secure communications, positioning/navigation, situational awareness, materials and composites, human effectiveness, space domain awareness, robotics, nanotechnology, missile warning, position, navigation and timing (PNT), satellite communications, coalition information sharing, biometrics, munitions design, hypersonics, alternative energy, improvised explosive devices (IED) defeat, weapons of mass destruction (WMD) defeat, responsive space, ground and space based radars, sensors, autonomous control, distributed missions, training systems, lasers, weapon systems, weapon delivery, remotely piloted aircraft, armaments interface, intelligence, surveillance and reconnaissance (ISR), sustainment, gap analysis, simulators, combined logistics, software updates, mission planning systems, world-wide flight requirements, electronic warfare, safety, aging aircraft, airlift, tankers, trainers, system modifications, directed energy, weapon stores, acquisition, development, co-production, interoperability, maintenance, system development, and upgrades.  <b>FY 2020 Plans:</b> Continue to identify, develop, process, negotiate, conclude, implement, and manage the increasing number of RDT&E bilateral and multilateral IAs that meet the goals, objectives, and mission of the USAF and DoD in the Air Domain. Negotiations will continue on IAs not concluded during FY19. New Air Domain agreements and amendments will be initiated IAW the NDS.  <b>FY 2021 Plans:</b> Continue to identify, develop, process, negotiate, conclude, implement, and manage the increasing number of RDT&E bilateral and multilateral IAs that meet the goals, objectives, and mission of the USAF and DoD in the Air Domain. Negotiations will continue on IAs not concluded during FY20. New Air Domain agreements and amendments will be initiated IAW the NDS.  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b>		1.678	1.800	1.871

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
Decrease of \$.271M is due to adjustments made within the USAF budget, the decrease will require re-alignment of priorities to International Activities Partnerships.			
<b>Title:</b> Engineer and Scientist Exchange Program/Administrative and Professional Exchange Program (ESEP/APEP) <b>Description:</b> Funds the USAF execution and management oversight of ESEP and APEP programs and personnel. Funds eight to ten field level military and civilian personnel from Air Force Materiel Command Facilities, Product Centers, Test Centers, and Logistic Centers for tours at selected allied partner government laboratories and facilities.  <b>FY 2020 Plans:</b> Continue USAF execution and management oversight of the ESEP and APEP programs and personnel. <b>FY 2021 Plans:</b> Continue USAF execution and management oversight of the ESEP and APEP programs and personnel.	0.300	0.300	0.300
<b>Title:</b> Air Force Materiel Command (AFMC) <b>Description:</b> Funds AFMC's ability to support IAC RDT&E activities which directly promotes international collaboration. Funds field level technical assessments and discussions that support technology identification and initial development activities in support of interoperability.  <b>FY 2020 Plans:</b> Continue support of AFMC's ability to identify, assess, continue RDT&E activities from 2019 and pursue new areas of cooperation which support interoperability and relationship building efforts with our international partners. <b>FY 2021 Plans:</b> Continue support of AFMC's ability to identify, assess, continue RDT&E activities from 2020 and pursue new areas of cooperation which support interoperability and relationship building efforts with our international partners.	0.150	0.150	0.150
<b>Accomplishments/Planned Programs Subtotals</b>	3.866	4.071	3.599

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<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 06 1001004F: <i>International Activities</i>	0.000	0.000	-	-	-	-	-	-	-	0.000	0.000

**Remarks**  
There is no other program funding for the activities pursued under 1001004F International Activities.

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**E. Acquisition Strategy**

This program element is the only source of USAF funds to identify, develop, process, negotiate, conclude, implement, and manage IAC opportunities to: (a) acquire, develop, upgrade, sustain, and support common or interoperable equipment with our allies; (b) leverage USAF resources through cost sharing and economies of scale with our partners; (c) exploit the best US and allied technologies for equipping coalition forces; and (d) foster interoperability and commonality with our allies. We obtain these benefits only after IAC opportunities are identified, explored, assessed, developed and IAs are negotiated and concluded. This PE provides funds to execute up-front IAC responsibilities, realize cooperative opportunities, assess allied technologies and generate sound, cost-effective cooperative programs between the USAF and our international partners in the areas of Air, Space and Cyberspace. Once IAs are concluded they are transferred to the appropriate technology or system program office and are then funded by the program office.