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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					PE 0207573F I National Technical Nuclear Forensics							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	0.000	2.307	1.788	0.000	1.788	1.788	0.397	0.000	0.000	0.000	6.280
674881: Prompt Diagnostics	-	0.000	2.307	1.788	0.000	1.788	1.788	0.397	0.000	0.000	0.000	6.280
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
In FY18, NTNF efforts under PE0604257F, BPAC 644818 were transferred to this PE to continue development of Prompt Diagnostics detection systems.												
A. Mission Description and Budget Item Justification												
National Technical Nuclear Forensics (NTNF) is the collection, analysis and evaluation of pre- and post-detonation radiological and nuclear materials, devices, and debris as well as the immediate effects created by a nuclear detonation. This program element may include necessary civilian pay expenses required to manage, execute, and deliver technology and sensor capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.												
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total				
Previous President's Budget				0.000	2.307	1.801	0.000	1.801				
Current President's Budget				0.000	2.307	1.788	0.000	1.788				
Total Adjustments				0.000	0.000	-0.013	0.000	-0.013				
• 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				0.000	0.000	-0.013	0.000	-0.013				
C. Accomplishments/Planned Programs (\$ in Millions)							FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	
Title: Nuclear Forensics - Prompt Diagnostics							0.000	2.307	1.788	0.000	1.788	

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>Description: Develop diagnostic detection systems to immediately record signals resulting from a nuclear detonation. These event signature elements support weapon and event characterization analysis for the purposes of identifying the weapon classification, magnitude of the detonation (yield), and Reaction Time History (RTH) of the device. The combination of these elements with radiochemical analysis enables analysts to distinguish between wide ranges of nuclear weapon designs and origin, supporting the national attribution assessment process.</p> <p>FY 2018 Plans: Develop of Prompt Diagnostics detection system. Focused areas include but are not limited to prompt output signal detection and nuclear debris collection analysis and evaluation.</p> <p>FY 2019 Base Plans: Will continue to develop Prompt Diagnostics detection system. Focused areas include but are not limited to prompt output signal detection and nuclear debris collection analysis and evaluation.</p> <p>FY 2019 OCO Plans: N/A</p> <p>FY 2018 to FY 2019 Increase/Decrease Statement: Funding decreased due to reduction in content of the technical data package for Prompt Diagnostics.</p>					
Accomplishments/Planned Programs Subtotals	0.000	2.307	1.788	0.000	1.788

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPAF 03 Line Item 834320: <i>National Technical Nuclear Forensics</i>	-	5.711	6.113	-	6.113	5.912	7.215	7.346	7.478	Continuing	Continuing
Remarks											
E. Acquisition Strategy Will continue development of Prompt Diagnostics detection systems. Focus areas include but are not limited to prompt output signal detection and nuclear debris collection analysis, evaluation, technical data package, documentation, revalidate documented design with representative articles, logistics product data, and product support analysis. Using a phased approach with a single integrator to incrementally deliver technical data and logistics product data by funding various nuclear related											

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government organizations/FFRDC's throughout the nation. Phase 1 and 2 are focused on documenting and delivering technical data packages, developing configuration status accounting, and Product Support Analysis/Logistics Product Data.		
<u>F. Performance Metrics</u> Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207573F / <i>National Technical Nuclear Forensics</i>				Project (Number/Name) 674881 / <i>Prompt Diagnostics</i>					

Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
Nuclear Forensics - Prompt Diagnostics	MIPR	Various : Various	-	0.000		2.061	Mar 2018	1.501	Jan 2019	-		1.501	Continuing	Continuing	-
Subtotal			-	0.000		2.061		1.501		-		1.501	Continuing	Continuing	N/A

Remarks
Multiple nuclear related organizations throughout the nation receive funds to work towards the completion of the prompt diagnostics system.

Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 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
PMA: Other Govt Cost	Various	Not specified. : Dayton, OH	-	0.000		0.246	Nov 2017	0.287	Nov 2018	-		0.287	Continuing	Continuing	-
Subtotal			-	0.000		0.246		0.287		-		0.287	Continuing	Continuing	N/A

			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	0.000		2.307		1.788		-		1.788	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force			Date: February 2018		
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	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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>United States Prompt Diagnostics</i>																												
Nuclear Forensics - Prompt Diagnostics																												
- Milestone Decision Authority Review																												
- Phase 1: Developmental Technical Data Package																												
- Phase 2: Complete Technical Data Package, Configuration Status Accounting, and Product Support Analysis/Logistics Product Data																												
- Milestone Decision Authority Review (FY18)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>United States Prompt Diagnostics</i>				
Nuclear Forensics - Prompt Diagnostics	1	2017	4	2021
- Milestone Decision Authority Review	4	2017	4	2017
- Phase 1: Developmental Technical Data Package	1	2017	4	2018
- Phase 2: Complete Technical Data Package, Configuration Status Accounting, and Product Support Analysis/Logistics Product Data	3	2017	1	2021
- Milestone Decision Authority Review (FY18)	4	2018	4	2018