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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 1203176F I Combat Survivor Evader Locator							
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	-	30.282	24.967	0.939	0.000	0.939	0.000	0.000	0.000	0.000	Continuing	Continuing
654522: CSAR EMD	-	30.282	24.967	0.939	0.000	0.939	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Combat Survivor Evader Locator (CSEL) System provides aircrews with end-to-end global satellite secure emergency communication capability during combat and peace-time flying operations. CSEL provides a hand held radio as part of the mandatory aircrew survival gear. CSEL is the Joint Program of Record. CSEL supports four of five Personnel Mission Phases: Report, Locate, Support, and Recover.

A National Security Agency (NSA) Cryptographic Modernization mandate and the Ultra High Frequency Follow-On satellite constellation are at the end of life and are driving upgrades to 60,000+ hand held radios and base stations. This effort includes development to modernize the system to integrate common waveforms, integrate broadcast reception for non-CSEL devices, provide for cryptographic modernization, leverage software defined capabilities based on the FY16 cryptographic study, and to procure intellectual property. This funding will also be used to perform various studies and analysis in support of the CSEL Enterprise.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver CSEL weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392F and 1206398F.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validate requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	29.253	24.967	0.946	0.000	0.946
Current President's Budget	30.282	24.967	0.939	0.000	0.939
Total Adjustments	1.029	0.000	-0.007	0.000	-0.007
• 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	2.100	0.000			
• SBIR/STTR Transfer	-1.071	0.000			
• Other Adjustments	0.000	0.000	-0.007	0.000	-0.007

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Change Summary Explanation FY2017: \$2.100M increase to fund cryptographic modernization.			
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018
Title: CSEL Next Generation Cryptographic Architecture (NGCA)		30.282	24.967
Description: A NSA cryptographic modernization mandate and the Ultra High Frequency Follow-On satellite constellation at end of life are both driving upgrades to 60,000 handheld CSEL rescue radios and base station.			
FY 2018 Plans: Continue cryptographic modernization development and begin formal testing.			
FY 2019 Plans: Complete formal testing and field the cryptographic modernization.			
FY 2018 to FY 2019 Increase/Decrease Statement: FY2019 decrease compared to FY2017 by \$24.021M. Justification for this decrease is described in plans above.			
Accomplishments/Planned Programs Subtotals		30.282	24.967
D. Other Program Funding Summary (\$ in Millions)			
Line Item	FY 2017	FY 2018	FY 2019
• OPAF 03 P-54: OPAF: BA03:	-	3.004	0.000
Line Item # 837170: <i>Combat</i>			
Survivor Evader Locator			
Remarks	Funding will be used to purchase hardware to upgrade the Ultra High Frequency (UHF) Base Stations.		
E. Acquisition Strategy This effort was awarded sole source to The Boeing Company due to the lack of technical data.			
F. Performance Metrics 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 / 5						R-1 Program Element (Number/Name) PE 1203176F / Combat Survivor Evader Locator				Project (Number/Name) 654522 / CSAR EMD					
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
Crypto Modernization - HW/SW Development	SS/CPIF	The Boeing Company : Huntington Beach, CA	-	29.303	Mar 2017	15.371	Mar 2018	-		-		-	Continuing	Continuing	-
Subtotal			-	29.303		15.371		-		-		-	Continuing	Continuing	N/A
Support (\$ 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
AIRWorks Next Generation Cryptographic Architecture (NGCA) Support	MIPR	NAVAIR : Saint Inigoes, MD	-	0.600	Nov 2016	4.601	Mar 2018	-		-		-	Continuing	Continuing	-
Other Agency Support	MIPR	Various : TBD	-	-		2.600	Apr 2018	-		-		-	Continuing	Continuing	-
Subtotal			-	0.600		7.201		-		-		-	Continuing	Continuing	N/A
Test and Evaluation (\$ 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
Crypto Modernization Developmental Testing	SS/CPIF	Then Boeing Company : Huntington Beach, CA	-	-		1.452	Mar 2018	-		-		-	Continuing	Continuing	-
Subtotal			-	-		1.452		-		-		-	Continuing	Continuing	N/A

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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
Advisory & Assistance Services	C/Various	Various : Hill AFB, UT	-	0.379	Jan 2017	0.400	Apr 2018	0.400	Jan 2019	-		0.400	Continuing	Continuing	-
Systems Engineering	C/Various	Various : Hill AFB, UT	-	-		0.543	Apr 2018	0.539	Mar 2019	-		0.539	Continuing	Continuing	-
Subtotal			-	0.379		0.943		0.939		-		0.939	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	-	30.282	24.967	0.939	-	0.939	Continuing	Continuing	N/A

Remarks

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-4, RDT&E Schedule Profile: PB 2019 Air Force										Date: February 2018																			
Appropriation/Budget Activity 3600 / 5										R-1 Program Element (Number/Name) PE 1203176F / <i>Combat Survivor Evader</i> <i>Locator</i>										Project (Number/Name) 654522 / <i>CSAR EMD</i>									

	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
CSEL Crypto Modernization																												
Crypto Modernization Development																												
Crypto Modernization Test & Evaluation (T&E)																												
Crypto Modernization Fielding																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 1203176F / <i>Combat Survivor Evader</i> <i>Locator</i>	Project (Number/Name) 654522 / <i>CSAR EMD</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>CSEL Crypto Modernization</i>				
Crypto Modernization Development	2	2017	4	2018
Crypto Modernization Test & Evaluation (T&E)	4	2018	3	2019
Crypto Modernization Fielding	4	2019	4	2020